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ABSTRACT

This guidebook presents a systems approach to planning, implementing, and evaluating mainstream programs for special needs learners in vocational education. (The guidebook itself models this system.) It is divided into four sections and numerous subsections (components) in this order: (1) Introduction (to mainstreaming, and the approach), (2) Program Planning (six components), (3) Program Implementation (twelve components), and (4) Program Evaluation (one component). Sections 2-4 comprise the steps required in beginning a new program or improving an existing one. Although they are presented in chronological order, many of the activities from different sections are interrelated and may occur simultaneously in actual practice. Each self-contained section presents a short introduction, recommended activities, and/or guidelines related to the topic. Selected resource materials, including samples, checklists, and flowcharts, are provided to illustrate and expand the concepts, approaches, and guidelines presented. These resource materials are suitable for reproduction. Each section was written to provide users with information on concepts, alternative approaches, and specific content. Flowcharts and/or checklists are included and can be used as administrative check-off sheets for critical steps in the various processes. (YLB)

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# VOCATIONAL ADMINISTRATOR'S GUIDEBOOK:

## MAINSTREAMING SPECIAL NEEDS STUDENTS IN VOCATIONAL EDUCATION

**Planning, Implementing, and Evaluating**
**Vocational Programs and Services for Special Needs Students**

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

This handbook is the first of a series of publications by the Center for Vocational Personnel Preparation at Indiana University of Pennsylvania focusing upon specific professional skills needed by personnel working with special needs students in vocational programs. The aim of this handbook is more than dissemination of information, however; it's purpose is to synthesize and s systematize information into a practical and useable model for vocational administrators, especially in the Commonwealth of Pennsylvania.

The Center for Vocational Personnel Preparation at Indiana University of Pennsylvania was established in 1978 as one of four comprehensive vocational centers in Pennsylvania. The charge to each of the Centers was to develop the type of program whic the Center felt would best prepare vocational teachers, administrators and teacher educators for vocational education in the future. The Indiana Center chose as its mission the preparation of personnel to implement performance-based education and the preparation of personnel to implement equity in vocationa education. This handbook is a partial response to the mission to help vocational personnel provide equal educational opportunity for all. We at the Center are grateful for the support and assistance provided by the Pennsylvania Department of Education, Bureau of Vocational Education and especially to Dr. John W. Struck, Direc tor, and Mr. Wayne Grubb, Supervisor for Disadvantaged and Handicapped Education.

We recognize the exemplary services of Dr. Robert Hoellein, principal investigator for this project, who researched and wrote this document. We acknowledge the effort of the Center staff in the preparation of this manual and the support and assistance of vocational special needs personnel throughout Pennsylvania for willingly par ticipating in the evaluation of the content of the manual.

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The development of this guidebook was supported by the Bureau of Vocational Education, Pennsylvania Department of Education and the U.S. Department of Health, Education and Welfare. However, points of view and opinions expressed herein do not necessarily represent official position or policy of either the Pennsylvania Department of Education or the U.S. Office of Education and no official endorsement should be inferred.

**Prepared for the Bureau of Vocational Education, Pennsylvania Department of Education under Contract Number 94-9008 with the Center for Vocational Personnel Preparation, Indiana University of Pennsylvania.**

**June, 1979**

# PREFACE

The purpose of this Guidebook is to identify and present practices and strategies which will assist vocational administrators in planning, implementing, and evaluating programs for mainstreaming special needs learners in vocational education. There are many tasks involved in beginning a new program or in improving an existing vocational program for disadvantaged and handicapped students. As the title indicates, this sourcebook is presented as a guide to aid vocational administrators in the development of a systematic approach to the delivery of appropriate programs and services. As such, it is meant to be a practical tool for vocational educators. The overall goal is to provide concise answers and examples for questions the busy vocational administrator might have regarding the development of a special needs vocational program.

As a "one-stop" resource for mainstreaming programs in vocational education, an attempt was made to synthesize concepts, practices, and materials from the current state of the art rather than add significant new information. Tasks completed in the process of developing this guide included: reviewing federal and state laws and regulations; surveying the literature; interviewing intermediate unit and local education agency administrators and staff; visiting and observing operational mainstreaming programs; and reviewing reports, systems, and other documents. The problem became one of making rational order of existing programs and resources; applying these into a systems model; and attempting to identify and present the best approaches, techniques, and concepts in one convenient sourcebook for vocational administrators.

A major element throughout this Guidebook is that of compliance with the law. Increasing interest in providing vocational education programs for special needs learners culminated in provisions contained in the Educational Amendments Act of 1976 (PL 94-482) and its regulations. The Education for All Handicapped Children Act of 1975 (PL 94-142) and the Rehabilitation Act Amendments of 1974 (PL 93-112) established the rights of handicapped persons to free and appropriate education. The inter-related regulations of the different laws are addressed in the Guidebook. In addition, procedures and activities are provided in relation to compliance to the rules and regulations of the Pennsylvania Department of Education.

The Guidebook is divided into four major sections and numerous subsections. Sections 2-4 comprise the steps required in planning, implementing, and evaluating mainstream programs in vocational education. These sections, with their numerous samples, flowcharts, checklists, etc., are the "heart" of the Guidebook. These major sections on planning, implementing, and evaluating mainstream programs are presented in chronological order; however, many of the activities from different sections are interrelated and may occur simultaneously in actual practice.

Each section of the Guidebook is self-contained. Following a short introduction, recommended activities and/or guidelines related to the topic are provided. Next, selected resource materials are included to illustrate and expand the concepts, approaches, and guidelines presented. These resource materials include samples, checklists, and flowcharts. They are designed to be removed from the guidebook and copied if so desired.

To the extent possible, each section was written to provide users with information on concepts, alternative approaches, and specific content. Where possible, these steps have been laid out in flowcharts and/or checklists which may be used as administrative check-off sheets for critical steps in the various processes. In summary, this Guidebook presents a systems approach to planning, implementing, and evaluating mainstream programs for special needs learners in vocational education and the Guidebook itself models this systematic approach.

## AUTHOR'S NOTES

Time constraints did not permit extensive field testing of this document. Since reader or user reactions from the field have not yet been incorporated, the author relied on his own judgment and consultation with colleagues to assess the useability of the document and to complete revisions. It would be helpful, and is encouraged, to have reactions from the field as to the relative value of the guidebook. Such reader or user response may lead to future revisions of this guide or to the development of new procedural manuals.

The Guidebook was originally conceptualized by the project directors as a practical resource to assist vocational educators with the various activities vital to the effective delivery of programs and services to learners with special needs. It is hoped that the final product has fulfilled, at least partially, this objective.

## ACKNOWLEDGMENTS

Many individuals contributed to the preparation of this guidebook. Appreciation is expressed to the staff of the Center for Vocational Personnel Preparation at the Indiana University of Pennsylvania for their cooperation and assistance throughout the project. Special thanks go to Tom O'Brien and Sheila Feichtner for their support, encouragement and many contributions to the completed manual.

Appreciation is extended to Wayne Grubb and Clara Lea Gaston of the Bureau of Vocational Education and Ray Greer of the Bureau of Special Education for giving of their time to critique portions of the manual and for offering many helpful comments and suggestions concerning the content and organization of the guidebook.

In addition to completing many of the figures in the manual and providing helpful counsel on the organization of the manuscript, all information contained in Section 19B, Employer and Student Follow-up Data, is the work of Merrill L. Meehan. As project consultant, his contributions to the manual are acknowledged with appreciation.

A debt of gratitude is owed to the administrations and staffs of Parkway West AVTS and Venango County AVTS for providing opportunities to observe their special needs programs and to benefit from their expertise in the vocational education of special needs students.

A special note of thanks is expressed to Susan Butler who often worked within restricted time limits, patiently decoded handwritten copy, typed numerous revisions of the manual and prepared the final manuscript for printing.

*R.H.H.*

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# 1. Introduction

# OVERVIEW OF MAINSTREAMING MOVEMENT

## Historical Perspective

The first significant initiation of efforts to provide appropriate vocational education opportunities for disadvantaged and handicapped persons came with the passage of the Vocational Education Act of 1963. The commitment to the provision of appropriate vocational programs and services to special needs* learners was ensured with the subsequent enactment of the Vocational Education Amendments of 1968.

Unlike previous permissive legislation, the Vocational Education Amendments of 1968 mandated that 25% of federal vocational grants to the states be set aside to meet the vocational needs of disadvantaged and handicapped. Specifically, the Amendments required that 15% of Part B funds be spent on programs and services for disadvantaged persons and that 10% of Part B monies be directed toward increasing the effectiveness of programs and services for handicapped persons.

With the implementation of the 1968 Amendments and its "earmarked" Part B monies, efforts to provide comprehensive vocational education for the disadvantaged and handicapped emerged at state and local levels. Most state and local education agencies attempted to respond to the mandates with the strengthening of existing programs and with the establishment of new special programs and services.

During the 1970's, national assessments of the administration and impact of vocational education found that efforts to meet the vocational needs of disadvantaged and handicapped were inconsistent and varied significantly from state to state (General Accounting Office Report, 1974; Olympic Research Corporation, 1974). In addition to identifying voids in vocational services to the special needs population, the national studies also recognized that the dimensions of the problem had expanded and that new and appropriate attention was necessary.

At the same time, increased attention to the educational needs of the handicapped was occurring in the other areas of education. The disenchantment of professionals in the field of special education, pressure from minorities and advocacy groups, decisions of the judiciary, and legislative actions combined to provide the impetus for the mainstreaming movement in education. These forces changed the emphasis in education from the development of specialized programs to the integration of handicapped students into regular classrooms and programs to the maximum extent possible. During the early seventies, a number of states adopted legislation requiring that handicapped students receive their education in the "least restrictive environment."

Efforts at the federal level to establish appropriate educational opportunities for special needs learners culminated in the enactment of three significant legislative acts which directly affected vocational education, special education, and vocational rehabilitation. Title II of the Education Amendments of 1976 (PL 94-482) was directed at the provision of appropriate programs and services to the disadvantaged and handicapped. The Education for All Handicapped Children Act of 1975 (PL 94-142) and the Rehabilitation Act Amendments of 1974 (PL 93-112) were enacted to establish the rights of handicapped persons to a free and appropriate education. These three acts, singularly and interactively, have ensured that learners with special needs will receive the educational and supportive services necessary for attaining their individual education and employment potential.

The Vocational Education Amendments of 1976 (PL 94-482) required states to spend 30% (the 1968 Act had designated 25%) of federal vocational education monies for programs for handicapped (10%) and disadvantaged (20%) students. In addition, the Amendments of 1976 required that the federal set-aside funds be equally matched with state and local dollars.

The Education for All Handicapped Children Act of 1975 (PL 94-142) represented a significantly expanded national commitment to the handicapped. In addition to insuring an appropriate education in the least restrictive educational setting, this legislative initiative provided such assurances as: an individualized education program plan, access to programs and services provided to non-handicapped students, non-discriminatory testing, confidentiality of information, and the right to due process procedures by parents.

The third legislative initiative with direct implications for the vocational education of the handicapped was the Rehabilitation Act Amendments of 1974 (PL 93-112). Within this legislation, Section 503 and Section 504 set forth substantive requirements regarding employment and education practices. Section 503 required employers with federal contracts and sub-contracts to develop affirmative action plans for hiring the handicapped and for non-discriminating work-related practices. Section 504 prohibited discrimination on the basis of handicap by any agency, including schools, which received federal financial assistance.

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*The term "special needs" will be used to denote disadvantaged and handicapped students since special needs implies a handicap in school, whether due to disability, disadvantagement, or dysfunctional school placement.

Disadvantaged persons with special difficulties that prevent them from successfully participating in regular vocational programs are eligible for appropriate program and supportive services through the provisions of the Vocational Amendments. The "mainstreaming" concept is a common component of all three laws. Under the provisions of the three Acts, most secondary students eligible for special education services are eligible for vocational rehabilitation and vocational education services. Consequently, handicapped students at the secondary school level are being placed in the least restrictive vocational setting and many are being mainstreamed into regular vocational classrooms and shops.

The complexities and implications of the recently enacted federal legislation for state and local agencies are substantial. The interrelationship among the three Acts demonstrates the commitment at the federal level to increase the accessability of programs and services for special needs learners. To meet the mandates of these laws calls for active cooperation among vocational education, special education, and vocational rehabilitation at state and local levels.

# Research On Mainstreaming

## Special Education

Several individual states, including Pennsylvania, had enacted legislation for the appropriate education of the handicapped prior to the federal legislative acts of mid-seventies. Early in the seventies, responding to judicial decisions or court actions brought by advocacy groups representing the handicapped, these states implemented rules and regulations for appropriate identification, placement, and planning for the handicapped. At the same time, many states had responded to the mandates of the Vocational Education Amendments of 1968 and had instituted efforts to meet the vocational program needs of handicapped and disadvantaged students.

Since the beginning of the mainstreaming movement, the research on integration of the handicapped into the regular classroom has been periodically reviewed and expanded upon by a number of reviewers (Chaffin, 1974; Larsen, 1975; Keogh and Levitt, 1976). Some of the significant conclusions reported by these assessments of progress in mainstreaming are as follows:

1. Most research on mainstreaming has been on the integration of educable mentally retarded students into regular education classrooms in the elementary grades. Little research data has been compiled about mainstreaming students with other handicapping conditions and limited information is available on integration of handicapped at the secondary school level.
2. In terms of program operation, emphasis has been on administrative arrangements for the location, identification and placement of handicapped. No one administrative option has been identified as being most effective for mainstreaming students.
3. Little research has been done on the effectiveness of various curricular and instructional approaches.
4. Few mainstreaming programs have monitored what happens to the handicapped student once placed in regular or transition classes.
5. Support services to assist teachers and students have been a neglected area of programming with services often limited or nonexistent.
6. To date, information about the educational effects of mainstreaming on EMR students has indicated some evidence in support of mainstreaming.
7. Regular classroom teachers have little, if any, preservice training in working with handicapped students.
8. Although regular classroom teachers felt that handicapped students were better off academically and socially in regular classrooms, they expressed a limited knowledge of how to work with these students and even less competence to provide individualized instruction. Even after inservice education, teachers did not feel competent to work with handicapped students.

9. Inservice education combining information giving and direct experiences in teaching handicapped students has gained some positive results in changing teacher attitudes about mainstreaming. Inservice approaches using only information giving, and approaches using information giving combined with observation of handicapped have failed to gain positive changes in teachers' perceptions.
10. Knowledge of individual instruction methods and behavior management techniques has been found to be prerequisite to a teacher's feeling of competence to work with the handicapped.

In summary, the "mainstreaming" movement in regular education has received extensive support both from outside and within education. Considerable effort has been expended on the administrative organization of programs with emphasis on appropriate identification and placement procedures. The operational aspects of the programs have received much less attention and little has been reported on the educational effects of the various mainstream approaches. Training in individual instructional techniques and behavioral management methods for regular classroom teachers and the provision of appropriate support services have been identified as two major needs for improving mainstreaming programs. And finally, the lack of evidence and data from ongoing programs has prevented any meaningful conclusions as to what works best in mainstreaming handicapped students.

## Vocational Education

The provision of appropriate programs for handicapped students in the least restrictive vocational setting has been met with many of the same concerns and obstacles encountered by regular education. Vocational educators have expressed a need for assistance in areas such as diagnostic evaluation, vocational assessment, instructional and curricular modification, and inservice education to provide vocational personnel with the necessary skills for working with the handicapped.

The literature on mainstreaming students with special educational needs in vocational education has been extensive in the areas of program philosophy, administrative structure, program progress, and "suggested" instructional approaches. However, just as with mainstreaming in regular education, there has been little reported on research in the areas of educational effects and impact data.

Preservice and inservice preparation of vocational teachers in instructional and curricular modification methods and in behavior management techniques has emerged as a significant priority in teacher training. With the increased involvement of special needs coordinators and vocational teachers in the development of individual education program plans for handicapped students, the task of developing individual performance goals and objectives has been included as a priority for teacher training.

Successful, exemplary programs of special needs education were identified by the National Association of Vocational Education Special Needs Personnel (1975), and discussed in its publication of **100 Successful Vocational Special Needs Programs.** The successful components of thirty exemplary programs were discussed in **Improving Occupational Programs for the Handicapped** (Parker, et al., 1972) and guidelines were provided for the administration and operation of occupational programs for the handicapped. Although published prior to the implementation of recent legislation, these publications remain excellent resources on mainstreaming approaches in vocational education.

Research and demonstration projects have been implemented in the area of special needs vocational education. Ongoing projects have been assessing the impact of mainstreaming in vocational education. Interagency cooperation among vocational education, special education, and rehabilitation agencies has been implemented at state and local levels. To date, substantial information has not yet appeared in the literature on the most effective and efficient strategies and techniques for mainstreaming efforts in vocational education. However, a number of reports of programs in progress have appeared in recent journals and have expressed positive support and results (Troxell and Sarandoulis, 1977; Gregarich, 1978; Godla, 1978).

The identification of program, service, and training needs to improve mainstreaming efforts in vocational education is a positive sign that activity is going on in the field. The resolution of these identified needs will contribute to improved special needs vocational education. The current literature reflects the complexity of the task for vocational educators and the need for cooperative planning to reach this goal.

# GLOSSARY OF TERMS

**APPROPRIATE PROGRAM.** A program of education and/or training for exceptional school-aged persons which meets their individual needs as agreed to by a parent, school district and/or intermediate unit personnel; or as ordered by a hearing officer; or upon appeal as ordered by the secretary of education. (7)*

**CHANGE IN EDUCATION STATUS.** An assignment or reassignment based on evidence that the person is exceptional, or thought to be exceptional. The following educational assignments are included: regular education, special education, no assignment or a change from one type of special education to another. Any change shall be in accordance with an Individualized Education Program. (7)

**DISADVANTAGED.** The term "disadvantaged" means persons (other than handicapped persons) who: (1) have academic or economic disadvantages, including persons who have limited English-speaking ability; and who require special services, assistance or programs in order to enable them to succeed in vocational education programs. For the purposes of this definition, "academic disadvantage" means that a person: (1) lacks reading and writing skills; (2) lacks mathematical skills; or (3) performs below grade level. For the purposes of this definition, "economic disdvantage" means that: (1) family income is at or below national poverty level; (2) participant or parent(s) or guardian of the participant is unemployed; (3) participant or parent of participant is recipient of public assistance; or (4) participant is institutionalized or under state guardianship. (6)

**EDUCATIONAL FIELD EXPERIENCE.** Any planned instructional activity which places students at a learning site, other than the school building at which they are enrolled, for the purpose of obtaining educational experiences not otherwise available. There are four general types of educational field experience programs defined for the purposes of these regulations:

(1) **Cooperative Vocational Education.** Planned instruction developed through a signed cooperative arrangement among school representatives, students, parents and employers with the community for providing students with the opportunity to alternate in-school academic and vocational instruction with entry-level paid employment in any occupational field. The student's total occupational work experience is planned, coordinated and supervised by the school in close cooperation with the employer. The following describes the kinds of cooperative vocational education:

(A) The specialized fields approach includes cooperative vocational education in agriculture, business, distribution, health occupations, home economics occupations or trade and industrial education.

(B) The diversified occupations approach provides a heterogenous group of students from more than one vocational education program.

(2) **Work Study Program.** A program designed to provide financial aid through part-time work for vocational students outside of school hours. The student may perform work in the school system or any other public agency. Work performed will be adequately supervised and coordinated. Whenever possible, it is desirable to relate the work-study program to the education program of the student. Generally, job placement should utilize the student's abilities, interests and training.

(3) **Work Release Program.** A program in which a student is released from school for a portion of the school day in accordance with existing federal and state law to obtain paid employment. The primary purposes of the program are to provide students with income and values associated with being productive. The type of employment may or may not be related to any future vocational interests or prior schooling or training. (3)

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*Number denotes source of definition. Sources are listed at the end of the glossary.

**FREE APPROPRIATE PUBLIC EDUCATION**. The term "free appropriate public education" means special education and related services which (A) have been provided at public expense, under public supervision and direction, and without charge, (B) meet the standards of the State educational agency, (C) include an appropriate preschool, elementary, or secondary school education in the State involved, and (D) are provided in conformity with the individualized education program. (4)

**HANDICAPPED CHILDREN.**

**PL 94-142** The term "handicapped children" means those children evaluated as being mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind, multi-handicapped, or as having specific learning disabilities, who because of those impairments need special education and related services.

**PL 94-482** Defines "handicapped" as a person who is mentally retarded; hard of hearing; deaf; speech impaired; visually handicapped; seriously emotionally disturbed; orthopedically impaired; or other health impaired person, or persons with specific learning disabilities; and who by reason of the above:

1. Requires special education and related services, and
2. Cannot succeed in regular vocational education program without special assistance, or
3. Requires a modified vocational education program

**PL 93-112, Section 504** Defines "handicapped person" as any person who has a physical or mental impairment which substantially limits one or more major life activities, has a record of such an impairment, or is regraded as having such an impairment.

*Major life activities are defined as functions such as learning, walking, seeing, hearing, speaking, breathing, caring for one's self, performing manual tasks, and working.

State Description Handicapped children are included under the classification of **Exceptional Persons.** Those persons evaluated in accordance with this chapter as being hearing impaired, mentally gifted and talented, mentally retarded, physically handicapped, learning disabled, brain damaged, speech and language impaired, socially and emotionally disturbed, visually impaired, or severely multihandicapped.

**INDIVIDUALIZED EDUCATION PROGRAM**. The term "individualized education program" means a written statement for each handicapped child developed in any meeting by a representative of the local education agency or an intermediate education unit who shall be qualified to provide, or supervise the provision of specially designed instruction to meet the unique needs of handicapped children, the teacher, the parents or guardian of such child, and, whenever appropriate, such child, which statement shall include (A) a statement of the present levels of educational performance of such child, (B) a statement of annual goals including short-term instructional objectives, (C) a statement of the specific educational services to be provided to such child, and the extent to which such child will be able to participate in regular education programs, (D) the projected date for initiation and anticipated duration of such services, and appropriate objective criteria and evaluation procedures and schedules for determining, on at least an annual basis, whether instructional objectives are being achieved. (4)

**LEAST RESTRICTIVE ENVIRONMENT**. To the maximum extent appropriate, handicapped children . . . are educated with children who are not handicapped, and that special classes, separate schooling or other removal of handicapped children from the regular education environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. (4,121a,55)

**LOW INCIDENCE HANDICAP.** Handicaps that involve visual, hearing or orthopedic-health impairments. (1)

**MAINSTREAMING.** The conscientious effort to place handicapped children into the least restrictive educational setting which is appropriate to their needs. The primary objective of this process is to provide children with most appropriate and effective educational experiences which will enable them to become self-reliant adults. Within this objective, it is thought preferable to educate children the least distance away from the mainstream of society. Hence there is a heavy emphasis on movement into the regular classroom wherever possible.

**MAINSTREAMING.** (Commonwealth Definition) An educational process of maintaining or returning exceptional persons who can best profit from such placement, to the regular education classroom, with any needed supportive services being provided in accordance with the nature of the placement. (7)

**PREVOCATIONAL SERVICES (EDUCATION TRAINING).** An evaluation and training program designed to provide students with the opportunity to gradually acquire those basic skills, work attitudes and behavioral patterns necessary to progress toward a specific occupational goal. (1)

**RELATED SERVICES.** The term "related services" means transportation, and such developmental, corrective, and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that such medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a handicapped child to benefit from special education, and includes the early identification and assessment of handicapping conditions in children. (4)

**RESOURCE ROOM TEACHER.** A special educator who works with handicapped students who have been referred from the regular classroom to a resource room to use specialized equipment and materials and/or to receive specialized instruction, either in a one-to-one or small group situation. The student still receives much of his instruction in the regular classroom. (1)

**SPECIAL EDUCATION**

The term means specially designed instruction, at no cost to the parents, to meet the unique needs of a handicapped child, including classroom instruction, home instruction, and instruction in hospitals and institutions.

Federal Description

The term includes speech pathology, or any other related service, if the service consists of specially designed instruction, at no cost to the parents, to meet the unique needs of a handicapped child, and is considered "special education" rather than a "related service" under State standards.

The term also includes vocational education if it consists of specially designed instruction, at no cost to the parents, to meet the unique needs of a handicapped child. (4)

Comment. (1) the definition of "special education" is a particularly important one under these regulations, since a child is not handicapped unless he or she needs special education. The definition of "related services" also depends on this definition, since a related service must be necessary for a child to benefit from special education. Therefore, if a child does not need special education, there can be no "related services," and the child, because not "handicapped," is not covered under the Act. (4)

**SPECIAL EDUCATION CONSULTANT TO REGULAR CLASSROOM TEACHERS.** A special education professional who primarily provides indirect services to handicapped students by working with the regular classroom teachers. Consultants are defined as devoting 50 percent or more of their time to indirect services.

Ideally, after observing the regular teacher working with the student with a learning problem, the consultant does diagnostic teaching in an attempt to prescribe and provide the special instructional materials and methods the pupil needs. She/he also assists in the continuous evaluation of the student. (1)

**SPECIAL NEEDS STUDENT.** A student who has a mental or physical handicap and/or an academic or economic disadvantagement that prevents him/her from succeeding in a regular educational program. (1)

**SOMEONE WITH SPECIAL NEEDS: AN ALTERNATIVE DEFINITION.** This is an individual who is having difficulty succeeding in a regular or special, career-oriented educational program due to the effects of a disability, disadvantage, and/or dysfunctional school placement, and who requires:

1. individually prescribed, unique and more powerful teaching techniques,
2. supplemental or supportive service which vary in type and extent depending on individual needs, and
3. additional resources from society for his education and for his acceptance by society. (1)

**VOCATIONAL ASSESSMENT (EVALUATION).** Determination of those assets and liabilities of an individual that are pertinent to her/his choice of career goals. Aspects of this assessment process include aptitude profile, interest rating, temperament conditions, physical behavior record, and previously acquired vocational skill competencies. (1)

**VOCATIONAL EDUCATION.**

**Vocational Education** means organized educational programs which are directly related to the preparation of individuals for paid or unpaid employment, or for additional preparation for a career requiring other than a baccalaureate or advanced program. (4)

Federal Description

The above definition of vocational education is taken from the Vocational Education Act of 1963, as amended by PL 94-482. Under that Act, "vocational education" includes industrial arts and consumer and homemaking education programs.

State Description

**Vocational Education.** Preapproved programs under public supervision and control which provide organized learning experiences designed to develop skills, knowledge, attitudes and work habits in order to prepare individuals for entrance into and progress through various levels of employment in occupational fields including agriculture, business, distribution, health, gainful and useful home economics and trade and industry. (3)

**VOCATIONAL REHABILITATION.** Vocational Rehabilitation is a process of assisting an individual who has a mental and/or physical disability, which poses a vocational handicap with services designed to return her/him to remunerative employment. Vocational habilitation would be a more accurate term for serving those with similar handicaps, but who have never been in remunerative employment. Service in either case usually includes diagnoses, evaluations, counseling and guidance, physical restoration, training, provisions of prosthetic appliances, maintenance and travel during training or while receiving services and follow-up. Each state has an office charged with providing these services but private agencies may also provide one or more as part of their programming. (1)

**WORK ADJUSTMENT TRAINING.** Structured, controlled training by which an individual's work environment is controlled so that appropriate behaviors and physical tolerance and capacities are learned and maintained and inappropriate behaviors are extinguished. (1)

## FOOTNOTES


1. Abbas, E.K. and P.L. Sitlington Glossary of Terms in Special and Vocational Education. Section VI in Abbas, E.K. and P.L. Sitlington. **Issues in the Preparation of Personnel for Vocational Programming of Special Needs Students: Synopses of Selected Materials.** Urbana, IL: University of Illinois, 1976.

2. Bureau of Special Education. **Standards for Special Education.** Harrisburg, PA: Pennsylvania Department of Education, 1977.

3. Bureau of Vocational Education. **Regulations, Standards and Guidelines for Vocational Education.** Harrisburg, PA: Pennsylvania Department of Education, 1978.

4. **Federal Register**, Tuesday, August 23, 1977, Part II (Rules and Regulations for PL 94-142, Education for All Handicapped Children Act). Washington, DC: Superintendent of Documents, 1977.

5. National Advisory Council on Education Professions Development. **Mainstreaming: Helping Teachers Meet the Challenge.** Washington DC: National Advisory Council on Education Professions Development, 1976.

6. **Vocational Education Guidelines for the Application of Federal Funds: Education Amendments of 1976, Public Law 94-482.** Harrisburg, PA: Pennsylvania Department of Education, 1978.

7. **Regulations of the State Board of Education of Pennsylvania. Chapter 13 Special Education.** Harrisburg, PA: State Board of Education, 1977.

# A SYSTEMS APPROACH TO MAINSTREAMING

Terms such as "systems approach" and "systems analysis" have appeared with increasing frequency in the educational literature in recent years. A number of systems approaches have been adapted to aid educators in the solution of management problems in education. The complexity of these systems approaches varies from simple models to elaborate models for systematically solving problems.*

For the purpose of this guidebook, the term "systems approach" is defined as a systematic approach to solving problems. A three stage systems model was selected for this manual as an organizational guide to aid vocational administrators in providing appropriate educational opportunities to special needs students. The three stages of the model are:

1. Planning — This stage includes the development of overall goals and measurable objectives; the identification of problems from documented needs; the identification of tasks to be completed; and the identification of possible strategies and tools for attaining objectives.

2. Implementation — This stage involves the installation of the program and the maintenance and coordination of the program components.

3. Evaluation

   A. Process — This stage involves the monitoring of progress in achieving program and individual student objectives and in utilizing program alternatives to achieve objectives.

   B. Product — This stage includes evaluation of impact of program; cost/benefit analysis; and information for revision of program.

The model provides a systematic approach to planning, delivering, and evaluating vocational education programs and services for students with special educational needs. The tasks involved in meeting the requirements of applicable federal law concerning the vocational education of disadvantaged and handicapped are presented within the model to assist vocational administrators in the organization and management of an appropriate special needs vocational program.

The general systems model for the delivery of vocational programs to special needs learners is presented in Figure 1. The components that make up each stage of the model are identified in the flowchart presented in Figure 2. The components of the program planning stage are considered essential steps necessary for designing a special needs program. Development of planning goals, establishment of an advisory committee, identification of the target population, completion of a needs assessment, and cooperative planning are components identified in the mandates for compliance with current federal legislation. The selection of an administrative organization to operate the special needs program is considered an essential ingredient for effective program management.

The program implementation components are presented in a sequential order, but many of the activities overlap during the installation and operation of the program. Although discrete components, they dovetail to provide appropriate programs and services for special needs students. The twelve components identified in the program implementation stage serve to provide a comprehensive and appropriate special needs program designed to meet the individual educational needs of disadvantaged and handicapped students.

The program evaluation stage, is divided into two types of evaluation — process and product. Process evaluation is ongoing assessment of the overall program that permits periodic decisions regarding the adequacy of the programs and services so that needed modifications and revisions can be made while the program is in progress. Process evaluation may be conducted on a course, semester, or yearly basis to provide information for program decisions.

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* *For educator's interested in systems approaches, two recommended resources are:*
*Hayman, J.L. "The Systems Approach and Education."* **The Educational Forum**, *38(4), 1974, pp. 493-501.*
*Kaufman, R.A.* **Educational System Planning**. *Englewood Cliffs, NJ: Prentice-Hall, 1972.*

Product evaluation is viewed as a terminal activity to provide program impact data. Student follow-up information, employer follow-up data, and cost/benefit analysis are the primary methods utilized in product evaluation. On the basis of the product evaluation, the impact of individual programs and services and the overall program can be determined to provide a baseline for decisions regarding future program direction and planning. The product evaluation should be designed to provide the information necessary to make program planning decisions such as: (1) continue present program; (2) make specific modifications and revisions of program; or (3) terminate the program. Because product evaluation is viewed as a critical component in program development, added emphasis has been given to this section of the guidebook.

Figure 1

General Systems Model for Mainstreaming Special Needs Students in Vocational Education

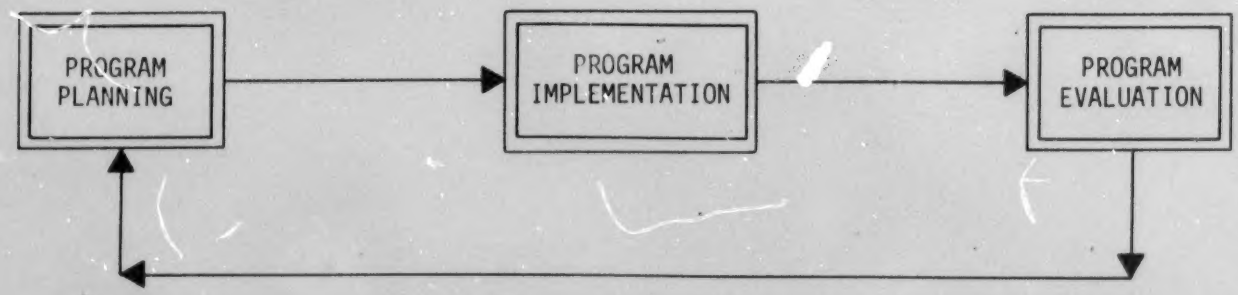
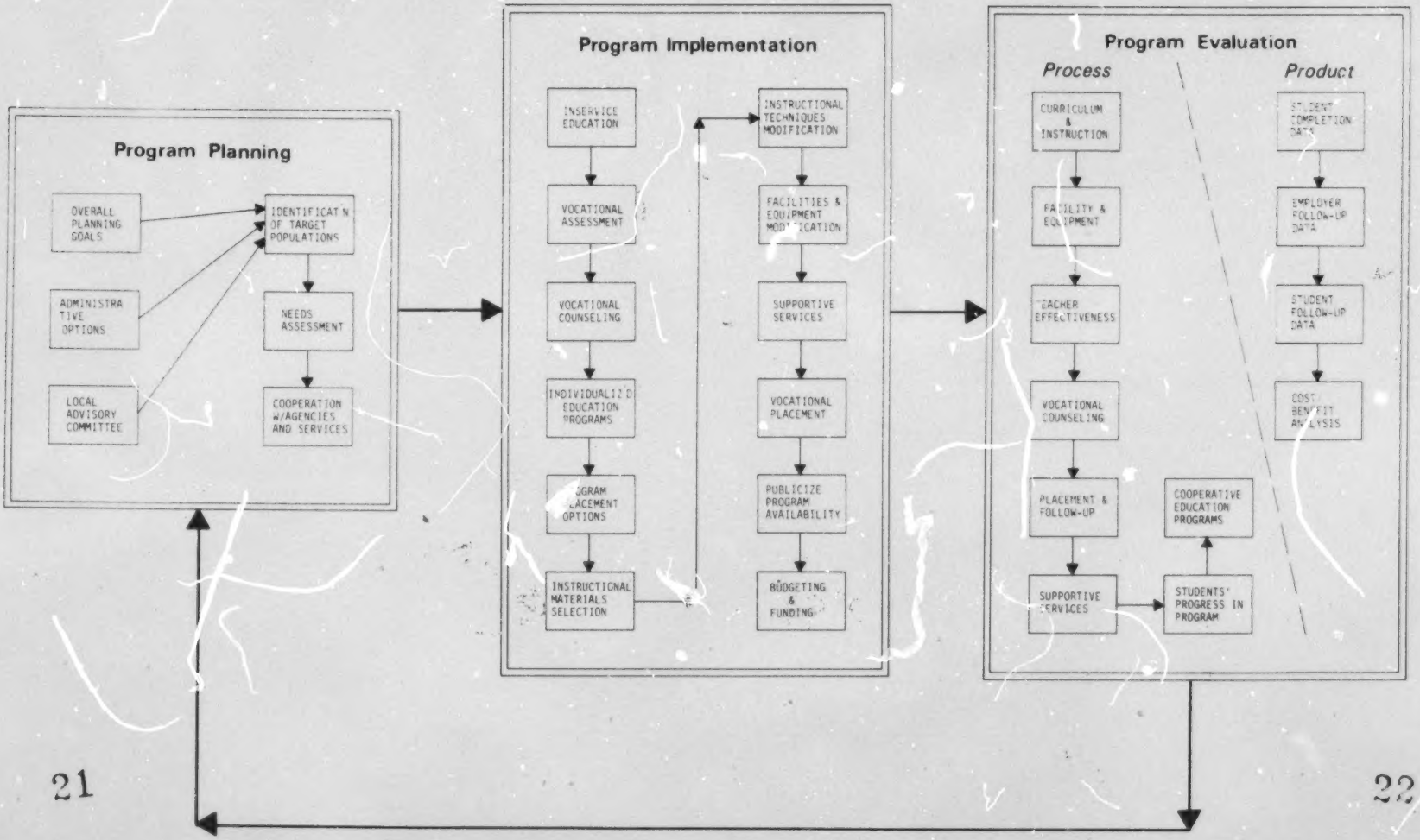


Figure 2

Systems Model for Mainstreaming Special Needs Students in Vocational Education



# 2. Program Planning

## Component 1 Overall Planning Goals for Vocational Education of Special Needs Students

Special needs planning and programming should be designed to enable disadvantaged and handicapped students to achieve vocational objectives that would otherwise be beyond their reach without such assistance. Planning goals should be developed and adopted to guide the planning of vocational education programs and services to special needs students.

### RECOMMENDED ACTIVITIES

The following program and service goals should be considered in the development of overall goals for planning:

1.1 Vocational education shall be provided as part of the continuum of educational programs available for special needs students.

1.2 All special needs students shall have the opportunity to participate in regular or special vocational preparation programs.

1.3 Vocational assessment to measure vocational interests and aptitudes shall be completed as part of the comprehensive, individualized assessment of special needs students.

1.4 Vocational counseling shall be provided to assist special needs students in exploring career opportunities, completing vocational skill training and securing employment.

1.5 A prevocational program shall be provided to prepare special needs students for eventual inclusion in an appropriate vocational preparation program.

1.6 Related and supportive services shall be provided to aid special needs students in achieving vocational objectives.

1.7 Cooperative education and/or work experience programs shall be provided to special needs students to aid in their transition from school to the work world.

1.8 Work activity or sheltered work training programs to develop work and work-related skills shall be provided for severely handicapped students when the handicapping condition prevents immediate enrollment in a vocational skill preparation program.

1.9 Job placement assistance and follow-up services shall be provided to aid special needs students in finding and keeping employment that is appropriate to their ability and training.

### STATE GOALS FOR VOCATIONAL EDUCATION IN PENNSYLVANIA

The State Goals for Vocational Education in Pennsylvania (1978) includes the provision of vocational education opportunities for the disadvantaged and handicapped. Goal VIII of the State Goals affirms the commitment to developing and expanding appropriate programs and supportive services for special needs students.

**GOAL VIII** DEVELOP AND EXPAND VOCATIONAL EDUCATION OPPORTUNITIES FOR THE DISADVANTAGED AND HANDICAPPED.

Vocational Education has a vital and growing responsibility in the total effort of the educational system to prepare all students for work. Therefore, the State Board reaffirms its position that vocational educators

must continue the development and expansion of programs for the disadvantaged and handicapped. It is essential that these persons have the same educational opportunities as all others benefiting from public education.

The State Board recognizes that special support services may need to be provided to the handicapped and disadvantaged. Whenever possible, mainstreaming these students into the regular program is desired. Architectural barriers must be removed wherever possible for the physically handicapped and modifications to equipment should be made to provide for students' special needs. In addition, remedial education may be necessary if the disadvantaged and handicapped are to benefit equally from vocational education.

**SUBGOALS:**

VIII.1 Provide remedial and supportive vocational services for disadvantaged and handicapped students to foster their placement in regular vocational education programs.

VIII.2 Modify regular vocational education programs to meet the needs of disadvantaged and handicapped students.

VIII.3 Develop special vocational education programs based on the needs of disadvantaged and handicapped students.

VIII.4 Provide more vocational education opportunities in areas of the state which have a high concentration of youth employment and/or school dropouts.

VIII.5 Promote exploratory (hands-on) pre-vocational programs for disadvantaged and handicapped students.

## Component 2 Administration of Special Needs Program

The organization and structure of the local education agency (LEA) will determine how the vocational education of special needs students is administered. The LEA should identify an individual responsible for the operation of the special needs program. Policies concerning the role and function of the position in the monitoring, coordinating, and managing of the special needs program should be developed by the LEA.

### RECOMMENDED ACTIVITIES

A number of administrative options are available for operating a special needs program. The type of administrative structure selected is often determined by the size of the population served by the LEA and by the existing administrative organization. Some administrative options are:

2.1 Appoint a special needs administrator who is responsible for the operation of a special needs program serving both disadvantaged and handicapped students and works cooperatively with the director of special education and the director of vocational education.

2.2 The director of special education or director of vocational education may assume the duties and responsibilities of administering the special needs program.

2.3 Appoint a coordinator of special needs services who, under the administrative direction of the director of special education or director of vocational education, is responsible for completing the administrative tasks involved in the program. The coordinator position may be a part-time position dependent on the size of the program.

## Component 3 Local Advisory Committee

The advisory committee provides a source of community input and support for the vocational education program. Each local education agency receiving financial assistance under the Vocational Education Act, as amended by the Vocational Amendments of 1976 (PL 94-482), is required to establish a vocational education advisory committee. The purposes of the advisory committee are:

1. Provide two-way communication between community and the school.
2. Review school's goals, objectives, and activities in relation to their ability to meet community needs.
3. Encourage local support for school program.
4. Help coordinating teacher and supportive staff in any way possible (i.e. help find job stations, provide field trips, etc.)

### RECOMMENDED ACTIVITIES

3.1 Advisory committees should draw interested members from all possible aspects of community life. Suggested member sources are:

School Administration
Teachers
Counselors
Labor Unions
Labor Management
Local Newspapers
Businessmen
Local Radio and TV Stations
Members of Local Government
Clergy
Members of Parent-Teachers Association
Parents
Students

There is some different of opinion as to the type and extent of involvement. For instance, should the committee concern itself with not only school problems but problems of broader social implications? If so, then membership will be more representative of the entire community. If the committee concerns itself with only school related matters, membership may reflect these priorities.

3.2 Some considerations when selecting a committee are:

- A successful advisory committee depends on the cooperation of all members, the ability to spend time working on the committee is as important as interest in vocational education.
- Limit membership to twelve or less; too large a group becomes unmanageable and inefficient.
- School authorities should not hand-pick the committees; this eliminates much randomness and validity.
- Some members should be from the same ethnic and socio-economic background as the target population.
- A letter of invitation and reply sent to each candidate may be more effective in finding interested members than simply approaching possible members.

3.3 Committee Organization.

- Send information delineating the goals of the advisory committee, background information on the school programs, and an agenda to each member before the first meeting.
- Elect a chairperson and recorder from the committee. School personnel should act as consultants.
- Stress that the role of the committee is to advise. No legislative decisions can be made.
- Agenda should be carefully planned before each meeting. Minutes should be sent out after each meeting.
- When possible, appoint sub-committees to undertake certain actions in order to save time.
- Meetings should be informal and relaxed.
- The frequency of meetings should comply with mandated minimum requirements, if any, for scheduled meetings and additional sessions should be determined by need.
- Develop a system for rotation and replacement of members.
- Develop voting and discussion procedures, and any other operational policies for the committee, preferably at the first meeting.

3.4 Suggested Duties for Advisory Committee

- To study the local school cirriculum (day and evening) and to work for the changes necessary to accommodate special needs students.
- To define the educational needs of the local school community.
- To assure that teaching materials and resources are consistent with school, community and student needs.
- To assure as far as possible that the physical plant, equipment, etcetera adequately meet educational needs.
- To assure that the special needs of pupils and the community are being serviced.
- To develop concerted community action on a specific school community problem.
- To determine skills needed by graduates to survive on the job.
- To assist in finding work stations and training placements.
- To help in developing training stations in their particular area of expertise.
- To provide feedback on community reactions to the program.
- To advise on problems such as transportation to the job site, placement of graduates, etc.
- To assist with needs survey, especially in the community.

3.5 Suggestions that aid school administrator-advisory committee communication.

- School personnel should acquaint committee members with the total Vocational Special Needs program, various available services, and laws governing special education and vocational education.
- Since they are volunteers, committee members should not be overworked.
- If possible, committee meetings should be held at the vocational training facility.
- Reinforce often that the role of the committee is to advise, not legislate.

- Keep the committee informed on school policies, educational laws, etc., pertaining to special needs education.
- Invite committee members to school often.
- Report results of any action taken on suggestions made by the committee.
- Accept and investigate criticism of the committee.
- Give credit and publicity to committee members whenever possible.

## Component 4 Identifying the Target Population

Procedures for gathering data on the population to be served should be established. It should be the responsibility of the administrator or coordinator of the special needs program to maintain communications with the guidance, special education and vocational education staffs regarding the identification of disadvantaged and handicapped students. Procedures to facilitate the identification process should be cooperatively devised by the participating staffs.

In developing policies and procedures for identification, guidelines for identifying students eligible for vocational special needs education should include criteria for eligibility for both disadvantaged and handicapped students. Attention must be given to the development of policies and procedures to assure compliance with the state and federal statutes regarding eligibility for services. Procedures should ensure that all eligible students have been identified for appropriate programs and supportive services.

### RECOMMENDED ACTIVITIES

4.1 Review existing identification policies, procedures, criteria and forms used for identifying special needs students in the school district(s). This should limit unnecessary duplication of forms and other efforts to identify eligible students.

4.2 Those working with special needs students should have a knowledge of the categories of disadvantaged and handicapped and be knowledgable of the types of handicapping conditions that fall within each definition.

4.3 Request from guidance, federal programs coordinator, and/or individual schools information on student participation in Title I programs, free lunch program, etc. to compile a list of students already identified as disadvantaged.

4.4 Contact special education program and/or intermediate unit to identify all handicapped, by type and severity of handicap, receiving special education services.

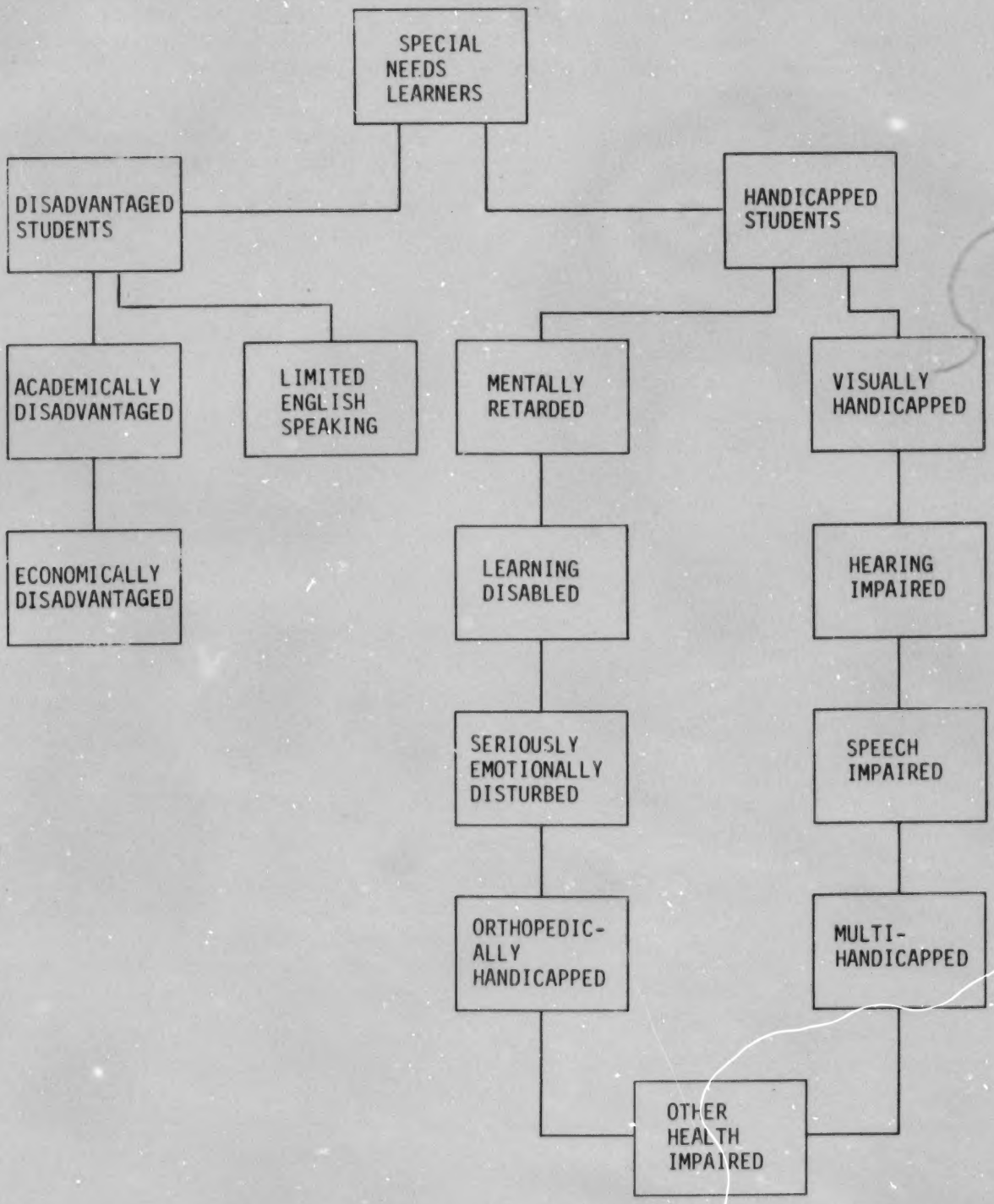
4.5 Although most disadvantaged and handicapped are identified before reaching the secondary school level, efforts should be made to ensure that all underserved and unserved special needs students are identified.

4.6 Outside agencies and community services should be utilized as resources in identifying the target populations.

4.7 For assistance in developing policies and procedures for the identification process for handicapped students, vocational administrators should consult with the local or I.U. director of special education regarding the Commonwealth Plan for Identification, Location, and Evaluation.

Figure 3

Special Needs Learners



## IDENTIFICATION OF DISADVANTAGED

Disadvantaged students may be identified through teacher referral, inquiry into prior participation in school programs for disadvantaged youth, examination of school records, and review of test scores. A disadvantaged person is one who has an academic, socioeconomic, or other disadvantagement, and the effects of the disadvantage PREVENTS THE PERSON FROM SUCCEEDING IN A REGULAR EDUCATION PROGRAM. In order to benefit from vocational education, the disadvantaged student requires special programming and/or supportive services in order to maximize the benefit from vocational education.

**Definition of DISADVANTAGED.** The term "disadvantaged" means persons (other than handicapped persons) who: (1) have academic or economic disadvantages, including persons who have limited English speaking ability; and (2) require special services, assistance or programs. For the purpose of this definition, "academic disadvantage" means that a person:

(1) lacks reading and writing skills;

(2) lacks mathematical skills; or

(3) performs below grade level.

For the purposes of the definition, "economic disadvantage" means that:

(1) family income is at or below the national poverty level;

(2) participant or parents (s) or guardian of the participant is unemployed;

(3) participant or parent of the participant is recipient of public assistance; or

(4) participant is institutionalized or under State guardianship.*

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*Vocational Education Guidelines for the Application of Federal Funds: Education Amendments of 1976, Public Law 94-482. Harrisburg, PA: Pennsylvania Department of Education, 1978.

## IDENTIFICATION OF HANDICAPPED

Most handicapped students have been identified before they reach high school age. This identification and classification must be completed by trained professional personnel. However, efforts should be made to ensure that all eligible handicapped individuals have been located and identified. In addition to handicapped students receiving special education services, underserved and unserved handicapped persons should be identified for eligibility for vocational education.

**Definition of HANDICAPPED CHILDREN.** The term "handicapped children" means those children evaluated as being mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, other health impaired, deaf-blind, multi-handicapped, or as having specific learning disabilities, who because of those impairments need special education and related services.*

Federal Description

Handicapped children are included under the classification of **Exceptional Persons.** Those persons evaluated in accordance with this chapter as being hearing impaired, mentally gifted and talented, mentally retarded, physically handicapped, learning disabled, brain damaged, speech and language impaired, socially and emotionally disturbed, visually impaired, or severely multihandicapped.**

State Description

(1) **Deaf** means a hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects educational performance.

Federal Description

**Deaf.** See Commonwealth definition of severely multi-handicapped.

State Description

**(2) Deaf-Blind** means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind children.

Federal Description

**(3) Hard of Hearing** means a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance but which is not included under the definition of "deaf" in this section.

Federal Description

**Hearing Impaired.** A hearing loss ranging from mild (hard of hearing) to profound (deaf), which interferes with the development of the communication process and results in failure to achieve full educational potential. A person shall be assigned to a program for the hearing impaired when the evaluation and Individualized Education Program indicate that such a program is appropriate, provided that the evaluation includes a report by an audiologist and otologist.

State Description

**(4) Mentally Retarded** means significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's education performance.

Federal Description

**Mentally Retarded.** Impaired mental development which adversely affects a person's educational performance. A mentally retarded person exhibits significantly impaired adaptive behavior in learning, maturation and/or social adjustment as a result of subaverage intellectual functioning. The degree of retardation and the

State Description

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**Federal Register*, Tuesday, August 23, 1977, Part II (Rules and Regulations for PL 94-142, Education for all Handicapped Children Act). Washington, DC: Superintendent of Documents, 1977.

**Bureau of Special Education. ***Standards for Special Education***. Harrisburg, PA: Pennsylvania Department of Education, 1977.

level of social and academic functioning, not deviant behavior patterns, shall be the factors in determining the individualized program. A person shall be assigned to a program for the mentally retarded when the evaluation and Individualized Education Program indicate that such a program is appropriate, provided that no person shall be assigned to a program for the:

(a) educable mentally retarded unless her or his IQ score is lower than 80.
(b) trainable mentally retarded unless her or his IQ score is lower than 55.
(c) severely and profoundly mentally retarded unless her or his adaptive behavior is so severely impaired that education programming is oriented to behaviors which may be considered absolutely basic to higher levels of skilled performance. Individuals with an IQ score lower than 30 may be considered for these programs and shall be evaluated by a physician prior to assignment.

Federal Description

(5) "**Multihandicapped**" means concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind children.

State Description

**Severely Multihandicapped.** Persons who are diagnosed as having two or more of the following severe handicapping conditions required for assignment to approved private schools (22 Pa. Code s171.23 (F).)

(i) **Blind.** A visual handicap of a severe degree. Those persons in whom there is visual acuity of 20/200 or less in the better eye with correcting glasses or a peripheral field so contracted that the widest diameter of such field subtends an angular distance no greater than 20 degrees.

(ii) **Brain Damage.** Those persons who manifest severe behavior and learning disorders resulting from a severe insult to the brain as identified by a neurological examination.

(iii) **Cerebral Palsy.** Those persons with severe bilateral, symmetrical, nonprogressive paralysis resulting from developmental defects in the brain, or trauma at birth who cannot carry on independently, the normal activities of daily living.

(iv) **Deaf.** A hearing handicap of a severe degree. Those persons in whom the sense of hearing is non-functional for the ordinary purposes of life. This includes the congenitally and adventitiously deaf. The following represents hearing loss as defined by audiometer measurements: (a) Severe hearing loss — 60 db to 90 db; and (b) Deaf — 90 db or more in both ears.

(v) **Emotional Disturbance.** Those persons who manifest a severe major affective psychosis which is characterized by a single disorder of mood, either extreme elation or depression that dominates the mental life of the person and is responsible for whatever loss of contact they may have with their environment.

(vi) **Muscular Dystrophy.** Those persons who manifest a severe wasting away and atrophy of the muscles whereby they become non-ambulatory, lose muscle power and are unable to participate in normal activities of daily living.

(vii) **Severely Mentally Retarded.** Those persons whose adaptive behavior is so severely impaired that educational programming is directed to behaviors that require closely supervised simple self-help and very simple work skills requiring full dependence upon others. This term is used to describe the degree of mental retardation present when intelligence testing is lower than an IQ of 25 as measured on individual psychological tests with no consideration of the standard error of measurement permitted. Those with such adaptive behavior and measured mental ability will be considered for these programs and shall be evaluated by a physician prior to assignment.

Description Federal

(6) **Orthopedically Impaired** means a severe orthopedic impairment which adversely affects a child's educational performance. The term includes impairments cause by congential anomaly (e.g., clubfoot, absence of some member, etc.), impairments caused by disease (e.g., polymyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g,, cerebral palsy, amputations, and fractures or burns which cause contractures).

State Description

**Physically Handicapped.** Orthopedic and/or other health impairments of sufficient magnitude to limit a person's classroom accommodation and educational performance. A person shall be assigned to a program for the physically handicapped when the evaluation and Individualized Education Program indicate that such a program is appropriate, provided that the evaluation includes reports from a physician and a certified public school psychologist.

Federal Description

(7) **Other Health Impaired** means limited strength, vitality or alertness due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, diabetes, which adversely affects a child's educational performance.

(8) **Seriously Emotionally Disturbed** is defined as follows:

(i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

(A) An inability to learn which cannot be explained by intellectual, sensory, or health factors;

(B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;

(C) Inappropriate types of behavior or feelings under normal circumstances;

(D) A general pervasive mood or unhappiness or depression; or

(E) A tendency to develop physical symptoms or fears associated with personal or school problems.

(ii) The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

State Description

**Socially and Emotionally Disturbed.** A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree: an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behavior or feelings; a general pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms,

pains or fears associated with personal or school problems. A person shall be assigned to a program for the socially and emotionally disturbed when the evaluation and Individualized Education Program indicate that such a program is appropriate, provided that the evaluation includes reports from a board-certified or approved psychiatrist.

Federal Description

**(9) Specific Learning Disability** means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, of mental retardation, or of environmental, cultural or economic disadvantages.

State Description

**Learning Disability.** A deficiency in the acquisition of basic learning skills, including but not limited to, the ability to reason, think, read, write, spell or to do mathematical calculations, as identified by an educational and psychological evaluation. Persons who have learning disorders which are primarily the result of visual, hearing or other handicaps or mental retardation or emotional factors of environmental disadvantaged are not learning disabled. The term learning disability does not exclude the possibility that a learning disabled person may also exhibit such conditions as brain damage or minimal brain disfunction. A person shall be assigned to a program for the learning disabled when the evaluation and Individualized Education Program indicate that such a program is appropriate, provided that the evaluation clearly indicates that the person can demonstrate average or above average intellectual functioning on an appropriate intelligence measure. The evaluation shall include an assessment of specific academic strengths and weaknesses.

Federal Description

**(10) Speech Impaired** means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, which adversely affects a child's educational performance.

State Description

**Speech and Language Impaired.** Communication disorders of impaired language, voice, fluency or articulation to such a degree that academic achievement is invariably affected and the condition is significantly handicapping to the affected person. A person shall be assigned to a program for the speech and language impaired when the screening by a speech clinician and the Individualized Education Program indicate that such a program is appropriate. Where appropriate, an evaluation by a certified public school psychologist or physician shall be performed.

Federal Description

**(11) Visually Handicapped** means a visual impairment which, even with correction, adversely affects a child's educational performance. The term includes both partially seeing and blind children.

State Description

**Visually Impaired.** A visual impairment, which adversely affects a person's educational performance. A person shall be assigned to a program for the visually impaired when the evaulation and Individualized Education Program indicate that such a program is appropriate, provided that the evaluation includes an examination by an eye specialist and a written report of the nature and degree of the visual impairment.

State Description

**Blind.** See Commonwealth definition under Severely Multi-handicapped.

## Component 5 Needs Assessment

The initial step in a systematic approach to providing appropriate vocational education services to special needs students is the completion of a needs assessment. The assessment of educational needs is an analysis of the discrepancy between what exists and what is needed to provide appropriate programs and services.

### RECOMMENDED ACTIVITIES

In order to design and implement a special needs program that is both effective and efficient, a needs assessment is considered an essential task in program planning. The following suggested areas of investigation are presented for consideration when developing a local needs assessment:

5.1 Identify current program and course objectives. Identify what modifications, if any, of objectives will be necessary to meet the instructional needs of disadvantaged and handicapped students.

5.2 Identify new courses or course modifications necessary to offer appropriate programs.

5.3 Identify new instructional methodologies or modifications of instructional techniques that will be appropriate for the instruction of special needs students.

5.4 Identify instructional equipment or modifications of instructional equipment that will be required to offer a course to special needs students.

5.5 Identify instructional staff and staff competencies needed to provide appropriate programs and services.

5.6 Identify facilities required to offer new or modified vocational programs for special needs students.

5.7 Identify related and supportive services needed to support the operation of special needs program.

All aspects of existing and needed facilities, equipment, staff, budget, etc., should be included in the needs assessment. The need for interagency, interdistrict, and community cooperation should be determined also in the needs assessment.

**Figure 4**

**Needs Assessment: An Example***

Since most vocational schools have implemented special needs programs, the following example of a needs assessment is designed as a review of an on-going special needs program. The contents of the example can be modified for conducting a needs assessment for establishing a new program. The example is not exhaustive and is intended to provide the vocational educator with a reference point for developing a needs assessment.

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**Adapted from Parker, S.* **Improving Occupational Programs for the Handicapped.** *Washington, DC: U.S. Department H.E.W., 1972 and* **Program Review for Vocational Special Needs.** *Columbus, OH: Ohio Department of Education, Division of Vocational Education, 1973.*

| NEEDS ASSESSMENT<br>Program Area | YES/Date Implemented | In Process/ Date to be Implemented | NO |
|---|---|---|---|
| I. Curriculum and Instruction | | | |
| 1. Overall planning goals are developed for serving the disadvantaged and/or handicapped. | | | |
| 2. There is evidence that the curriculum was developed as a result of a district-wide needs assessment. | | | |
| 3. Specific quantified objectives are developed for serving the disadvantaged and/or handicapped which are related to and support the general planning goals. | | | |
| 4. The curriculum is designed to develop the total individual by utilizing available inter-agency services in a cooperative manner (social, community, and civic agencies). | | | |
| 5. The vocational training program is being carried on in a manner comparable to the occupation itself. | | | |
| 6. The training is meeting the demands of the labor market. | | | |
| 7. District implementation priorities have been established which have considered administration, personnel, equipment and facilities. | | | |
| 8. Programming and services for handicapped do not duplicate programming or services eligible for reimbursement within the State Board of Education Program Standards and Regulations for special education. | | | |

List the outstanding points of the curriculum and instruction.

Identify areas of weakness and list recommendations with priorities for improvement and approximate costs.

| Recommendations (in order of priority) | Approximate Costs |
|---|---|
| | |

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| Program Area | YES/Date Implemented | In Process/ Date to be Implemented | NO |
|---|---|---|---|
| II. Facilities and Equipment<br><br>The facilities and equipment should be of the type that affords the student the opportunity to benefit to their fullest potential in the pre-vocational activities or vocational training in which they are enrolled.<br><br>1. Facilities are equal to or approaching that which is required in a vocational unit.<br><br>2. Equipment is representative of that found in business or industry.<br><br>3. Instructional aids are available as needed.<br><br>4. Facilities do not isolate disadvantaged and/or handicapped persons from integrated program participation. | | | |

List the outstanding points of the facilities and equipment.

Identify areas of weakness and list recommendations with priorities for improvement and approximate costs.

| Recommendations (in order of priority) | Approximate Costs |
|---|---|
| | |

| Program Area | YES/Date Implemented | In Process/ Date to be Implemented | NO |
|---|---|---|---|
| III. Instructional Staff<br><br>The instructional staff should show evidence of possessing the necessary professional and technical qualifications required to effectively provide programming and services for disadvantaged and/or handicapped persons.<br><br>1. The mental, physical, and emotional characteristics of the disadvantaged and/or handicapped who are being served are being considered, both in methods of instruction and in personal relations with the learner.<br><br>2. Personnel are occupationally competent.<br><br>3. Personnel are professionally qualified.<br><br>4. Supervision is available for the improvement of instruction.<br><br>5. The instructional staff is receiving inservice training and/or other appropriate preparation for dealing with the special needs of the disadvantaged and/or handicapped. | | | |

List outstanding points of instructional staff.

Identify areas of weakness and list recommendations with priorities for improvement and approximate costs.

| Recommendations (in order of Priority) | Approximate Costs |
|---|---|
| | |

| Program Area | YES/Date Implemented | In Process/ Date to be Implemented | NO |
|---|---|---|---|
| IV. Students<br><br>Students should show evidence of having the interest and aptitudes necessary to profit by the programming or services being offered.<br><br>1. The individual student has been properly identified as being disadvantaged and/or handicapped in accordance with the guidelines of the Special Needs Service.<br><br>2. A realistic individual education program plan has been developed for handicapped students as a result of an assessment of the individual student's needs, interests, and abilities.<br><br>3. The programming or services are available for the individual student to achieve his vocational objective.<br><br>4. Students are encouraged to be, or are involved in, vocational student organizations | | | |

List outstanding characteristics of students.

List areas of weakness and list recommendations with priorities for improvement and approximate costs.

| Recommendations (in order of priority) | Approximate Costs |
|---|---|
| | |

| Program Area | YES/Date Implemented | In Process/ Date to be Implemented | NO |
|---|---|---|---|
| V. Product Review<br><br>Product review is the examination of students after they have completed or left the Special Needs programming. This review is to focus on the data and information which is available regarding recent graduates and students who were enrolled in the program within the last five years.<br><br>1. There is an annual follow-up of students who complete the Special Needs Program.<br><br>2. Evidence indicates that the students are satisfied with the Special Needs programming and the effect it has had on their obtaining initial employment.<br><br>3. Standardized measures are used to identify occupational strengths of the Special Needs programming and individuals.<br><br>4. There is evidence which identifies the students who obtained full-time for part-time employment in the occupational area for which they received training.<br><br>5. There is evidence that indicates some students find employment in occupational areas related to the area for which instruction was provided.<br><br>6. Average houly wage earnings of graduates employed full-time in the occupational area are available.<br><br>7. Students who continue their education after completing Special Needs programming are also accounted for in a review of former students. | | | |

| Program Area | YES/Date Implemented | In Process/ Date to be Implemented | NO |
|---|---|---|---|
| V. Product Review (cont.) | | | |
| 8. Consideration is given to those individuals who do not enter the labor market because of armed services, marriage and illness. | | | |
| 9. Community support for the programming is reflected by the request from employers for students completing it. | | | |
| 10. There is a low proportion of former students who are unemployed. | | | |

List outstanding points of product review.

Identify areas of weakness and list recommendations with priorities for improvements and approximate costs.

| Recommendations (in order of priority) | Approximate Costs |
|---|---|
| | |

## Component 6 Cooperation with other Agencies and Community Services

Outside agencies and community services should be utilized to the maximum extent possible in the attempt to provide appropriate vocational programs and supportive services. Each community will have a varying scope of service available and the special needs administrator should strive to develop existing resources. An effort should be made to open lines of communication at the state and local levels with agencies that might provide supportive services to the students.

### RECOMMENDED ACTIVITIES

6.1 Cooperation with Vocational Rehabilitation

- The special needs administrator should seek active cooperation with the nearest vocational rehabilitation office to provide a coordinated approach to serving the vocational needs of individuals with special needs.
- The coordinated efforts of vocational education and vocational rehabilitation should include cooperation in areas such as:

  ° Inter-agency development of individual education program plans for students eligible or expected to be eligible for vocational rehabilitation services.

  ° Inter-agency consultation on vocational training and job placement.

  ° Referral of students to vocational rehabilitation to provide a continuum of vocational training and services beyond the high school program.

6.2 Cooperation with Community Agencies and Organizations.

- Agencies and organizations within the community should be utilized to provide needed services and resources. Vocational personnel should attempt to develop existing resources and establish effective lines of communication at the local level with agencies that may provide assistance in the delivery of more effective services to students.
- Effective programming must include close involvement and participation with individuals associated with the community agencies and services.
- Community agencies are helpful only when utilization of their services is successfully established. Suggestions for establishing services are:

  ° Make initial contact with the community agency to inform them of the vocational special needs program and to determine: (1) the role they can play in helping the population in the program, (2) what services are available, and (3) a referral procedure for services.

  ° Provide parents and students with information about the various agencies in the community, the services available from the agencies, and how they might receive these services.

  ° Utilize the local community organizations and media to keep the public informed about the goals and achievements of the special needs program.

  ° Design follow-up procedure to assess student utilization of community resources.

# COOPERATIVE ARRANGEMENTS WITH OUTSIDE AGENCIES AND COMMUNITY SERVICES*

Definition of **Cooperative Arrangement** — An agreement to transfer responsibility for specific program and/or service activities from the local vocational school to an outside agency, community service or another vocational school.

Cooperative arrangements with other agencies, community services, or another vocational school should be considered when:

- Vocational school does not have available personnel to provide the needed service.
- Vocational school personnel do not possess the appropriate skills to deliver the desired service.
- Vocational school does not have the needed educational program or resources.
- Vocational school activity can be supplemented by outside activity.
- Vocational school cooperative inter-agency planning will provide more effective/efficient services.



*Adapted from "Guidelines for Cooperative Arrangements (Final Draft)." Harrisburg, PA: Division of Vocational Education, 1979.

# 3. Program Implementation

## Component 7 Inservice Education

A variety of inservice training programs, both required and voluntary, should be developed. These should include orientation sessions for all school staff members at the beginning of the school year, one-to-two day programs at inservice days or county-wide workshops, and inservice training programs of longer duration. In addition, staff members should be encouraged to attend summer institutes or take specific college level courses that would aid them in serving the handicapped and disadvantaged. It should be the responsibility of the program coordinator to regularly inform staff of appropriate course offerings.

Effective inservice education should include all professional personnel that are involved in the vocational training of the disadvantaged and handicapped — teachers, counselors, supportive services personnel, and administrators.

### RECOMMENDED ACTIVITIES

7.1 Local needs should determine the topics to be presented and the format of the inservice sessions. Scheduling options for inservice include:

- Provide beginning school year orientation program on overall special needs program.
- Establish on-going inservice program during the school year based on identified training needs, perceived teacher needs, and district and administrative needs.
- Visitation program organized, released time for staff (e.g. regular vocational teachers visit classes for exceptional children, special education teachers vocational classes, and staff visits to other districts to observe ongoing programs).
- One-to-two day programs or county-wide workshops.

7.2 Assess personnel to identify possible incentives for personal professional development, e.g. released time, credits, attendance at professional meetings, etc.

7.3 In developing an inservice program the following topics should be considered. Program planners may emphasize certain subjects areas depending on the needs of the participants and the time frame of the inservice education.

- Techniques for recognizing different types of handicapping conditions and awareness of how these may effect the students' performance.
- Recommended behavioral approaches (e.g., behavior modification) designed to maximize appropriate classroom behavior and learning potential of the student.
- Resources and procedures for implementing a comprehensive vocational assessment program.
- Components of a sequential special needs vocational education program.
- Procedures for coordinating the services provided by other public and private agencies for the benefit of the individual student.
- Suggested modifications of curriculum, equipment, instructional materials and teaching strategies for aiding the disadvantaged and handicapped students in achieving their vocational potential.
    - team teaching
    - special education supplemental resource instruction
    - instructor aides/interpreters/readers/tutors
    - student teams (buddy system)

- ° taped materials/braille or large print materials
- ° modified/simplified instructional materials
- ° low cost equipment modification
- ° prescriptive educational planning (e.g., designing individualized short and long term objectives for each student)
- ° individualized instruction; flexible exit/entrance scheduling; modular units of instruction; use and preparation of vocational exploration packages; and learning activity packages
- ° emphasis on "step-by-step" and "hands-on" instruction

- Introduction to specific curriculum materials designed for special needs students.
- Translation of job skill requirements to instructional programming for special needs students.
  - ° how to identify the functional skill requirements for job performance and how to break these down into specific task requirements.
  - ° how to translate job-skill requirements and task requirements into an instructional program.
  - ° how to develop training plans, evaluation instruments, evaluation procedures, and criteria for successful performance.

## Component 8 Vocational Assessment

Vocational assessment should be an integral part of the vocational program. It should be designed to provide information to the vocational staff and to aid the student in gaining insight into his/her abilities and appropriate career choices.

### RECOMMENDED ACTIVITIES

8.1 Gather background information on each student as a preliminary step.

8.2 Determine number and type of psychometic tests to be used in assessment.

- A selection committee should have the responsibility for determining the tests to be used. This committee might include:
  - ° Vocational Evaluator
  - ° Work Experience or Cooperative Education Coordinator
  - ° Guidance Counselor
  - ° School Psychologist
- Additional members of the committee may include:
  - ° Appropriate personnel from a nearby rehabilitation center or local BVR office
  - ° Appropriate personnel from intermediate unit
  - ° Appropriate personnel from nearby college or university

8.3 Determine the number and type of basic skills tests to be purchased or locally developed. An example of a locally developed assessment instrument is presented in Figure 6.

8.4 Determine type of work samples to be used for vocational assessment. Criteria for selection should include: (1) budget; (2) space available; and (3) type of disadvantagements and handicapping conditions of students to be evaluated. The work samples should range from simple tasks to complex operations and include a range from gross motor to fine motor dexterity.

8.5 Establish criteria for assessment of work behavior to measure students work characteristics and "work personality" during vocational assessment.

8.6 Develop guidelines for the administration of tests. The following are presented as guides for the assessment of special needs students:

- Individualize the test program. While a basic test battery should be given to all students, one or more additional tests may be desirable; these should be selected on the basis of the studen's interests and vocational potential.
- Test instructions should be altered, varied or clarified if necessary so that the student understands the test. This may include simplified verbal instruction for the mentally retarded, the use of sign language for the hearing impaired, or brailled or verbal instructions for the visually impaired.
- Include several practice test items to acquaint the student with the test procedures. This might be done in one or more special education classes prior to the vocational assessment period.
- When possible, select tests that are untimed (power tests) rather than tests that have rigid time limitations as part of their structure and scoring.

- Efforts should be made to assure that the evaluation is a multifactored assessment and is in compliance with Section 504, P.L. 93-112, regulations.

8.7 Administer tests individually when possible; small groups of no more than eight to ten may be feasible for students with a similar handicapping condition or disadvantagement.

8.8 In the interpretation of test results, the vocational evaluator needs to consider the following:

- It is necessary that the evaluator knows what is being measured and the relationship of particular skills, abilities, etc., to different occupations.
- It is necessary to determine whether the evaluation is for the immediate future or more long range. Some qualities change, while other qualities remain relatively stable.
- It is necessary to evaluate in relation to the individual's past and present environment. Knowledge of the student's environmental background is essential in interpreting assessment results.
- In interpreting tests to students and their parents emphasis should be placed upon positive aspects of the student's performance. Testing, to be valid should assist the student in identifying strengths and gaining some indication how to correct weaknessess.

8.9 A comprehensive vocational assessment report should be prepared to aid in developing an individual plan for the student's appropriate vocational program placement.

Figure 5
Flowchart for Conducting Vocational Assessments

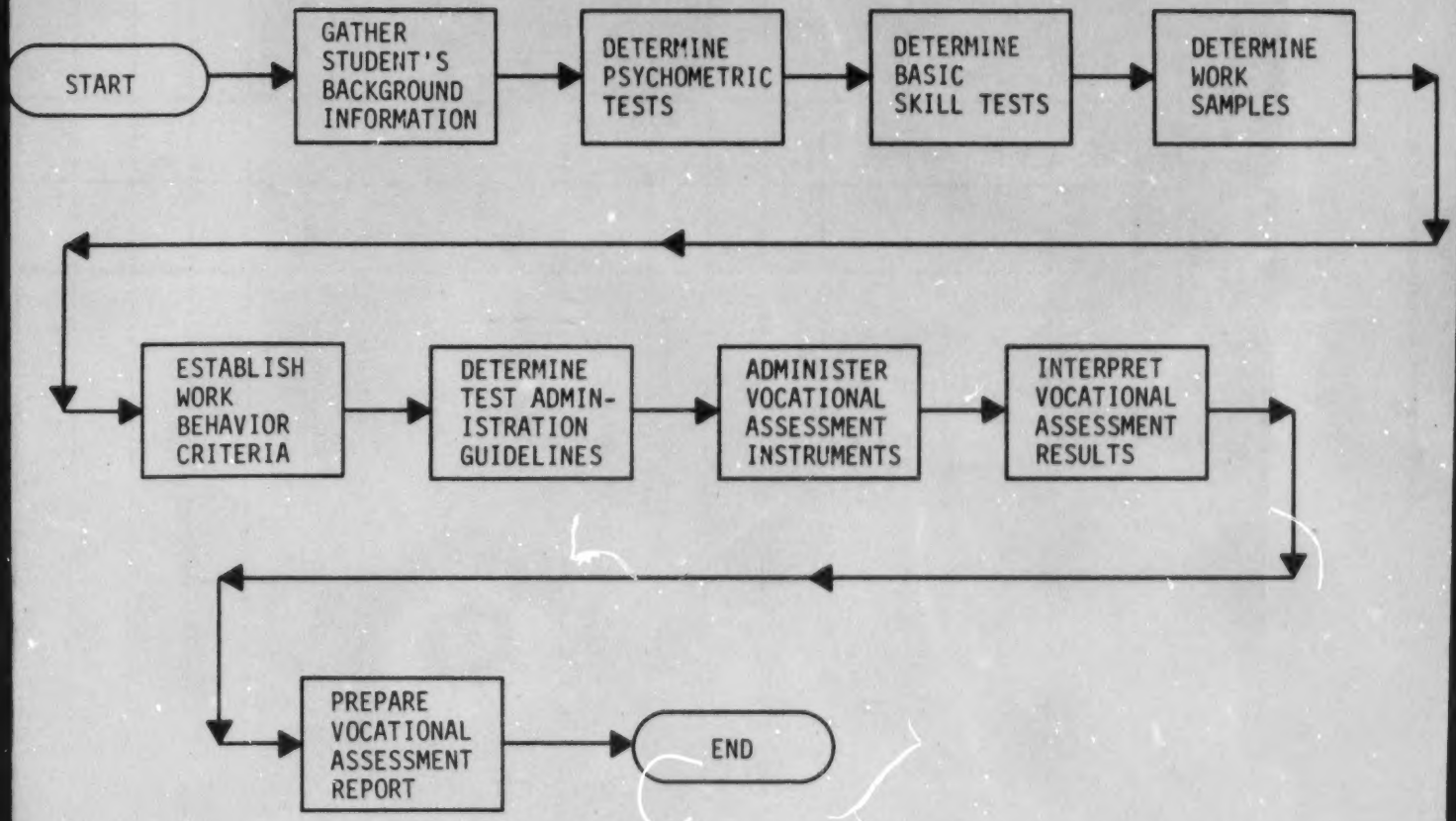

Figure 6
Warehouse Program
Pre-Placement Assessment Checklist*

Student's Name _____ Date _____

Home School _____ Assessor's Name _____

| No. Item | Poor | Fair | Satis-factory | Good | Excel-lent |
|---|---|---|---|---|---|
| A. Specific Job Skills | | | | | |
| 1. Opens, positions, and climbs 3 foot ladder | | | | | |
| 2. Opens, positions, and climbs 8 foot ladder | | | | | |
| 3. Manipulates a hand truck | | | | | |
| 4. Operates a pallet jack | | | | | |
| 5. Lifts and places boxes on shelves | | | | | |
| 6. Conducts a simple inventory w/records | | | | | |
| 7. "Pulls" a customer's order from shelves | | | | | |
| B. General Work Habits and Attitudes | | | | | |
| 8. Follows oral instructions | | | | | |
| 9. Follows written instructions | | | | | |
| 10. Speaks clearly | | | | | |
| 11. Writes legibly | | | | | |
| 12. Works steadily | | | | | |
| 13. Works unsupervised | | | | | |
| 14. General work attitude | | | | | |

*Form designed by M.L. Meehan

# WORK ASSESSMENT/WORK EVALUATION SYSTEMS

## BENNETT HAND TOOL DEXTERITY TEST

**Description:** The student is asked to remove twelve sets of bolts, washers, and nuts from the left-hand upright and replace them into the right-hand upright, using wrenches and screw drivers. The test is designed to measure manipulative skills independent of intellectual factors, using four common mechanical hand tools.

**Scoring:** Scored in minutes and seconds with percentile norms available on electrical maintenance workers, employees and applicants in a manufacturing company, students at a vocational high school, high school dropouts in a metropolitan area, airline engine mechanics, apprentice welders.

**Source:** The Psychological Corporation, 304 East 45th Street, New York, New York 10017.

## COMPREHENSIVE OCCUPATIONAL ASSESSMENT AND TRAINING SYSTEM

**Description:** Work Samples are used to assess and predict the vocational potential of individuals prior to placing them into training programs or actual work situations. The objective of the Work Samples is to assess each individual's interest, performance capability and general behavior relative to various job situations. The Work Samples, derived from a job analysis, approximate the actual job environment and simulates a wide range of work activities (i.e., physical movements, mental functioning, performance standards, operations, materials and equipment, etc.)

COATS Work Samples are broadly representative of occupations in which large numbers of the nation's labor force are employed.

**Source:** Prep Inc., 1575 Parkway Avenue, Trenton, NJ 08628.

## CRAWFORD SMALL PARTS DEXTERITY TEST

**Description:** In part one, tweezers are used to insert small pins in close fitting holes in a plate and to place collars over the pins; in part two, small screws are placed in threaded holes in a plate and screwed down with a screw driver. The test is designed to measure fine eye-hand coordination.

**Scoring:** A timed test with percentile norms available from a number of specific groups such as: trade and technical high school students, assembly job applicants, employed assemblers, and factory applicants.

**Source:** The Psychological Corporation, 304 East 45th Street, New York, New York 10017.

## HESTER EVALUATION SYSTEM

**Description:** The system is a method of assessing vocational abilities and relating them to specific jobs. H.E.S. includes 26 separate tests which measures 28 independent ability factors.

**Scoring:** Converts raw test scores into usable data. After testing, the raw scores plus some additional characteristics are computer analyzed. The computer print-out includes scaled scores for the ability factors tested, scaled scores for various job families, and a list of specific jobs for the person tested.

**Source:** Hester Evaluation System, 120 South Ashland Boulevard, Chicago, Illinois 60607.

## JEVS' WORK SAMPLE BATTERY

**Description:** Includes 28 work samples with activities performed in a simulated work setting which reflect primary skills in actual jobs. The battery is arranged in a hierarchy of increasing complexity and allows for performance, interest and behavior evaluation. JEVS requires a maximum of 4th grade reading level. The

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**This section presents a **selected** list of resources for work assessment/work evaluation. The systems presented should not be considered an inclusive listing of resources available to the vocational evaluator. In addition, the inclusion of an assessment/evaluation system in this section does not connote an endorsement and no such endorsement should be inferred by the reader.*

work samples, related to the worker trait groups of the DOT, were developed by the Jewish Employment and Vocational Service of Philadelphia. Since 1967, the U.S. Department of Labor has supported research and the establishment of work sample units in Manpower facilities. The JEVS is used to assess work potential of handicapped, disadvantaged, minority group populations, and school populations including vocational-technical students and drop-outs.

**Scoring:** Assesses basic skills of 10 worker traits as described by DOT. The results on each of the 28 work samples and for each worker trait provides the evaluator with groups of jobs in which the student may be successful. Report includes recommendations for employability planning based on occupational and personal skills, interests, behavior, characteristics, and learning style. The JEVS was re-normed in 1972 and norms were updated in 1976.

**Source:** Pleasantville Educational Supply Corporation, 21 Paulding Street, Pleasantville, NY 10570.

### JOB SAMPLE TECHNIQUE

The work sample is a technique that reproduces the basic essentials of an actual industrial operation. Such assessment usually makes use of tools and equipment utilized by industry, but simulated equipment may be developed to reduce the hazards of actual machines. Industry, rehabilitation and manpower programs have developed work samples to assess work potential.

### McCARRON-DIAL WORK EVALUATION

**Description:** The MDWES involves work evaluation which follows specific psychometric methods and structural observations.

**Scoring:** The MDWES is normed on mentally handicapped adults (mentally retarded, chronic emotionally disturbed, and cerebral-palsied) from sheltered workshops and community placements.

**Source:** Commercial Marketing Enterprises Department M.D.W.E.S., 11300 North Central Expressway, Suite 105, Royal Center Tower, Dallas, Texas 75231.

### MICRO-TOWER

**Description:** A group evaluation system designed to be completed in 3-5 days. There are 13 work samples patterned after particular job tasks. The work samples provide information on individual student strengths and weaknesses in the aptitude areas of: motor skills, spatial abilities, clerical perception, verbal skills, and numerical skills. Attempts have been made to correlate the work samples with the General Aptitude Test Battery (GATB) and the DOT. Audio-cassettes and photobooks are utilized to aid the evaluator in the administration of the work samples.

**Scoring:** Some work samples stress speed while others stress accuracy. Percentile norms are provided for type of disability, sex, ethnic group, and handedness. Norms are also available for handicapped high school students, students in special education, and disadvantaged.

**Source:** ICD Rehabilitation and Research Center, 340 East 24th Street, New York, NY 10010.

### MINNESOTA RATE OF MANIPULATION

**Description:** Five tests administered on a board containing sixty holes and large round pegs. Measures of eye-hand coordination in shop and office occupations are obtained.

**Scoring:** Scored in seconds and in percentile norms.

**Source:** American Guidance Services, Inc., Publisher's Building, Circle Pines, Minnesota 55014.

**PENNSYLVANIA BI-MANUAL**

**Description:** Assembly and disassembly of one hundred nuts and bolts and placement of the assemblies into holes in a board. Assesses the dexterity of both hands, fingers, gross movements of both arms, eye-hand coordination, bi-manual coordination, and indications of the person's ability to use both hands in coordination.

**Scoring:** Scored in seconds with percentile scores available by sex, age, education, and normal vision and impaired vision for both assembly and disassembly tasks.

**Source:** American Guidance Service, Inc., Publisher's Building, Circle Pines, Minnesota 55014.

**PURDUE PEGBOARD**

**Description:** The test consists of sequential insertion of pegs and the assembly of pegs, collars, and washers. Is intended as a dexterity measure assessing hand, finger and arm, as well as finger tip dexterity, in the selection of employees for industrial jobs.

**Scoring:** Percentile scores are available for males and females from different categories (applicants for assembly jobs, general factory work and production work, heavy production workers, utility and service workers, machine operator applicants.)

**Source:** J. A. Preston Corporation, 711 Fifth Avenue, New York, NY 10013.

**SINGER/GRAFLEX VOCATIONAL EVALUATION SYSTEM**

**Description:** Utilizes an audio-video teaching machine to present programmed instruction. There are fifteen stations, each fitted into a separate carrel containing a teaching machine with a film strip, synchronized tape cassette, tools, and materials necessary to performance of the task. Each program consists of instructions on how to operate the teaching machine, occupational information about jobs related to the sample, and programmed instructions on how to perform the task.

**Scoring:** Scored for both speed and quality, although emphasis on the quality of the finished product. The system permits the client to work at own pace. Because instructions are presented orally, students with reading handicaps are not penalized.

**Source:** Singer Education Division, 80 Commerce Drive, Rochester, New York 14623.

**SITUATIONAL ASSESSMENT VIA SUB-CONTRACTING**

**Description:** Requires the establishment of a workshop where varied subcontracts are procured from local industry. The major goal is to observe, record and evaluate the student in as real a work setting as possible. Particular work skills such as peer relationships, reaction to supervision, pressure, fatigue, etc., are then evaluated by two or more supervisors. (If the facility can develop a scale and manual of terms, the objectivity of the evaluation is greatly increased). Norms on the individual student's production can be obtained through time and methods study. Situational assessment is best used in conjuction with other commercial evaluation systems.

**TOWER WORK SAMPLE BATTERY**

**Description:** Developed at the Institute for the Crippled and Disabled (ICD) under the sponsorship of the Vocational Rehabilitation Administration. There are 110 jobs samples grouped into fouteeen major areas. The samples are progressive, beginning with the simple and progressing to the most complex. Attempts have been made to relate the samples to the DOT. Samples are related to work in the New York area and modifications of technique and the development of local normative date are encouraged. Instructions are written, but may be supplemented by evaluator explanations.

**Scoring:** Scored for both speed and quality, but emphasis is on the quality of performance. It has been widely used in programs serving the physically handicapped.

## VIEWS - VOCATIONAL INFORMATION AND EVALUATION WORK SAMPLE

**Description:** Includes 16 work samples to provide vocational assessment/evaluation for handicapped population. The battery of hands-on activities, representative of worker requirements in occupational areas in which large segments of the labor force are employed, are to be used in a simulated work environment. No reading skills are required and the system is designed to assess the work potential of mentally retarded and persons with a wide range of learning disabilities. Assesses students vocational interests and behavior, rate of learning, and quality of work and productivity.

**Scoring:** Provides numerical scores on rate of learning, quality of work, and productivity. The report includes behavorial observations covering attention span, ability to follow instructions, frustration tolerance and any special types of training given to the student.

**Source:** Pleasantville Supply Corporation, 21 Paulding Street, Pleasantville, NY 10570.

## Component 9 Vocational Counseling

Counseling should be a continuous component of the total vocational preparation process. A comprehensive counseling program should include the vocational planning, vocational assessment, scheduling and implementing of a student's vocational plan. The counseling staff, in consultation with the coordinator of the special needs program, should be specifically responsible for the development and implementation of counseling services to the disadvantaged and handicapped.

### RECOMMENDED ACTIVITIES

9.1 The vocational counselor should obtain background information on the students in the areas of: (1) interests and tentative vocational goals; (2) medical, psychological, social, economic, vocational, and economic factors; and (3) readiness for vocational skill preparation training.

9.2 Following comprehensive evaluation, a counseling session should be held to inform the student of the results of the assessment and aid the student in planning a vocational program.

9.3 When there is more than one counselor in a vocational school, all special needs students should be assigned to one counselor. This counselor should have the qualifications, training (through pre-service or in-service experience) and interest in students with special needs.

9.4 Discipline related matters should be handled by an administrator — not a counselor. No effective rapport can be established if the student views the counselor primarily as a disciplinarian.

9.5 Vocational counselors should be in direct contact with all aspects of the education program for the handicapped and disadvantaged, including academic and vocational coursework, and all aspects of work experience training.

9.6 The vocational counselors should maintain direct contact with those state and local agencies and organizations which might be of benefit or assistance to the student. The vocational counselors should also be aware of junior college and vocational training school requirements which might affect the special needs students' post-high school training.

9.7 Frequent conferences should be scheduled with the student to interpret each phase of the vocational education process. The student's parents/guardians should also be informed of the student's vocational progress.

9.8 Additional sessions should be scheduled as the need arises: the vocational counselor and vocational staff members should be available to counsel each individual student regarding career goals, problems relating to courses or work experience and any personal, social, or academic problems.

# CONSIDERATIONS IN VOCATIONAL PLANNING
# SPECIAL NEEDS STUDENT

Student Characteristics

**1. Level of Ability**

- Reasoning and judgment. (Are skills limited? If impaired, how extensive is the limitation and how does it affect the student's functioning?)
- Self awareness. (Is the student aware of own assets and limitations?)
- Understanding of world around her/him. (Does the student comprehend and interact with surrounding environment realistically?)
- Degree of handicapping condition. (Is student's handicap or disadvantagement in the mild, moderate, or severe level of impairment?)
- Level of achievement. (How has student benefitted from exposure to education and training which has been available?)
- Potential for independence. (What is the prognosis for vocational and social self-maintenance in the community?)
- Communication skills. (How well does the student communicate with peers and adults?)

**2. Physical Characteristics**

- Level of physical development. (Does the student's physical development deviate from or reflect the expected level of physical growth for age and sex?)
- Physical appearance. (Are there any cosmetic physical anomalies which might affect acceptance or vocational advancement?)
- Physical handicaps. (Does student have any significant motor, sensory, health or other handicaps that may affect vocational planning and training?)
- Motor skills. (Does the student have any problems with gross or fine motor coordination skills?)
- General health. (Does the student have a history of illness and what is the student's current health status?)

**3. Emotional Functioning**

- Self-concept. (Does the student have a realistic self-image? If the student has limitations, is the student aware of limitations and has he/she adjusted to them?)
- Independence. (How much does the student rely on others for support in situations social and emotional?)
- Emotional stability. (Does the student's pattern of emotional behavior deviate from or reflect expected level of emotional functioning for age?)
- Motivation. (Does the student demonstrate a desire to work toward short-term and long-term realistic goals with sustained effort?)
- Behavior pathology. (Is there a history of emotional disturbance or current evidence of emotional problems which require treatment by specialists?)

**4. Social Functioning**

- Family relations. (How does student relate to parents and siblings? What is present state of family organization and stability?)
- Peer relations. (How does student relate to peers of own age level?)
- Sex development. (How well is student adjusting and coping with sexual development?)

- Mobility. (How well does the student utilize available transportation to pursue social activities? Does the student have any limitations which may need attention so that the student can utilize available transportation to vocational activities?)

- Personal appearance. (How well does the student maintain appropriate personal appearance?)

**5. Socio-economic Considerations**

- Social status. (Is the social position of the student's family influencing the vocational planning of student?)

- Economic status. (Is the income and occupational level of the student's family influencing the vocational planning of the student?)

- Vocational expectations. (Are the family vocational expectations for the student influencing the planning of the student?)

- Ethnic-cultural background. (Is the ethnic-cultural background of the student influencing decisions in the vocational planning of the student?)

**6. Readiness for Vocational Training**

- Vocational goals. (Does the student express realistic expectations about present vocational training and future employment?)

- Previous training. (If the student had any previous job training, what progress was made?)

- Abilities and aptitudes. (Does the student possess any skills which can be used to aid in assisting the student in making a vocational choice?)

- Work tolerance. (What are the student's level of attention, level concentration, ability to sustain activity, etc.?)

- Attitudes and habits related to work. (What patterns of work behavior and attitudes has the student demonstrated when in work-like or job training situations?)

## Figure 7
## Checklist Of Considerations In Vocational Planning For Special Needs Students

| STUDENT CHARACTERISTICS | CONSIDERATIONS | AREA OF CONCERN Yes | No | ? | COMMENTS |
|---|---|---|---|---|---|
| 1. Level of ability | • Reasoning and Judgment<br>• Self-awareness<br>• Understanding of relation to environment<br>• Degree of handicapping condition<br>• Level of achievement<br>• Potential for independence<br>• Communication skills<br>• Other* _____ | | | | |
| 2. Physical Characteristics | • Level of physical development<br>• Physical appearance<br>• Physical handicap<br>• Motor skills<br>• General Health<br>• Other* _____ | | | | |
| 3. Emotional Functioning | • Self-concept<br>• Independence<br>• Emotional stability<br>• Motivation<br>• Behavior pathology<br>• Other* _____ | | | | |
| 4. Social Functioning | • Family relations<br>• Peer relations<br>• Sex development<br>• Mobility<br>• Personal appearance<br>• Other* _____ | | | | |
| 5. Socio-economic | • Social status<br>• Economic status<br>• Vocational expectations<br>• Ethnic-cultural background<br>• Other* _____ | | | | |
| 6. Readiness for Vocational Training | • Realistic vocational goals<br>• Previous training<br>• Abilities and aptitudes<br>• Work tolerance<br>• Attitudes and habits<br>• Other* _____ | | | | |

*If other category is used, Please specify

OVERALL GENERAL IMPRESSIONS OF STUDENT:

_____

_____

_____

## Component 10 Individual Education Program Plan for Handicapped Students

The individual education program (IEP) is a written statement, developed by a team of persons, indicating the specific program plan designed for each handicapped student. The IEP is to be an ongoing program plan for appropriate education and training. The IEP is to be completed on at least an annual basis.

When appropriate, the IEP must include vocational services that are designed to meet the student's needs and abilities. When vocational services are provided as part of the IEP, the vocational trainer(s) should be involved in the development of the vocational objectives and program planning for the individual education program.

**Recommended activities**

10.1 IEP Committee Composition. Minimum committee composition includes the teacher, the representative of the LEA, the parent and, when appropriate, the student. The committee should include, when appropriate, all implementers of the IEP: teachers, diagnosticians, and representatives from programs and services to be provided in the plan.

10.2 Statement of Present Levels of Educational Performance. Information stated in terms of strengths and weaknesses and in language understandable for teachers and parents.

10.3 Statement of Annual Goals. Goals are to be student centered derived from strengths and weaknesses of the individual.

10.4 Short-term Instructional Objectives. Involves task analysis of annual goals. Timelines, services, media and materials are specified for each objective.

10.5 Statement of Specific Education Services. Identify related services needed and how services will be provided.

10.6 Percentage of Time in Regular Program. The IEP Committee determines percentage of time in regular programming.

10.7 Projected Date for Initiation. The IEP committee determines dates for initiation of programs and services.

10.8 Duration of Services. The length of time for participation in programs and services is determined through the annual review.

10.9 Evaluation Procedures. Evaluation of progress or change in program and services based on accomplishment of goals and objectives. Maintenance in program or change of program determined by achievement of measurable criteria set forth in the objectives.

10.10 Procedural Safeguards. The child and parent are entitled to procedural safeguards including:

- Due process
- Procedures for hearings
- Nondiscriminatory testing
- Least Restrictive Enivronment
- Testing in native language
- Confidentiality
- Right to representation in due process
- Surrogate parents

For assistance in developing appropriate policies and procedures for the development and implementation of individual education program (IEP) plans and procedural safeguards, the vocational administrator should obtain **An Introduction to Individualized Education Program Plans in Pennsylvania** by the Bureau of Special Education and the National Learning Resource Center of Pennsylvania.

**Figure 8**
**Seven Essential Components of an Individualized Education Program (IEP) in Pennsylvania Schools***

1. A written statement of the student's present levels of educational performance.

2. A statement of annual goals reflecting the student's present levels educational performance and specifying the behavior to be achieved through the individualized education program.

3. A list of short-term objectives which serve as steps in achieving each annual goal.

4. A statement of objective criteria, evaluation procedures and schedules for determining, on at least an annual basis, whether the instructional objectives are being achieved.

5. A statement of the extent to which the student will be able to participate in a regular education program (mainstreamed).

6. A description of all special education and related services required to meet the student's needs, any special instructional media and materials to be provided and the type of physical education program in which the student will participate.

7. The projected date for beginning the program and the anticipated duration of these services.

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*Source: National Learning Resource Center of Pennsylvania. An introduction to individualized education program plans in Pennsylvania: Guidelines for school age IEP development. Harrisburg: Pennsylvania Department of Education, 1977.

Figure 9
Flowchart for Developing an Individualized Education Program (IEP)

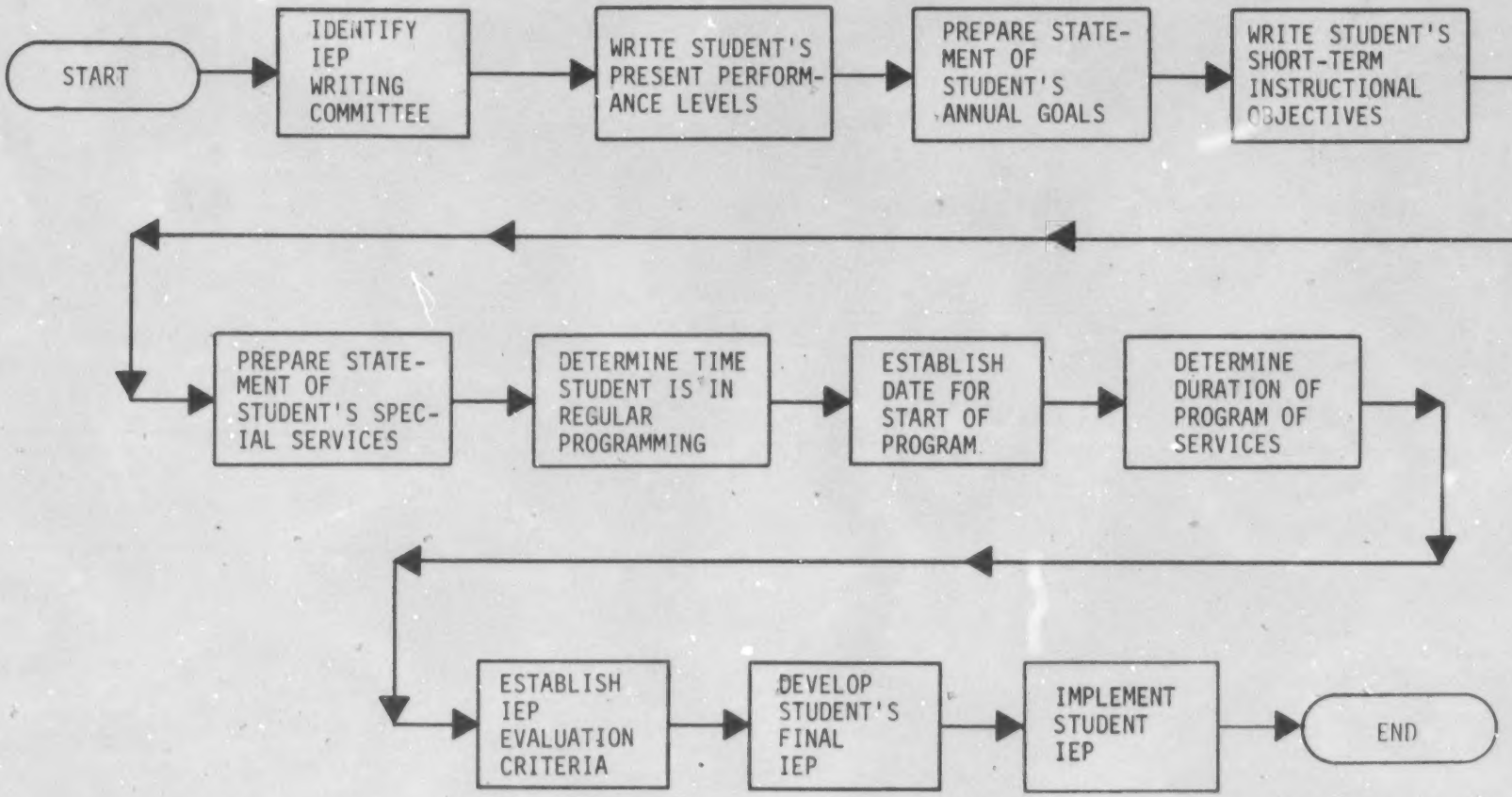

START
IDENTIFY IEP WRITING COMMITTEE
WRITE STUDENT'S PRESENT PERFORM-ANCE LEVELS
PREPARE STATE-MENT OF STUDENT'S ANNUAL GOALS
WRITE STUDENT'S SHORT-TERM INSTRUCTIONAL OBJECTIVES
PREPARE STATE-MENT OF STUDENT'S SPEC-IAL SERVICES
DETERMINE TIME STUDENT IS IN REGULAR PROGRAMMING
ESTABLISH DATE FOR START OF PROGRAM
DETERMINE DURATION OF PROGRAM OF SERVICES
ESTABLISH IEP EVALUATION CRITERIA
DEVELOP STUDENT'S FINAL IEP
IMPLEMENT STUDENT IEP
END

Figure 10
Short Form Individualized Education Program
(IEP) Evaluation Checklist

Evaluator: _____ Date: _____

IEP Identifier: _____

| No. | Criteria* | Yes | No | Comments |
|---|---|---|---|---|
| 1. | Does the IEP contain a written statement of the student's present levels of educational performance? | | | |
| 2. | Does the IEP contain a statement of annual goals of behavior to be achieved? | | | |
| 3. | Does the IEP have a list of short-term objectives related to each annual goal? | | | |
| 4. | Does the IEP contain a statement of objective criteria, evaluation procedures and schedules for determining if the instructional objectives are being achieved? | | | |
| 5. | Does the IEP contain a statement of the extent to which the student will be able to participate in a regular educational program (mainstreamed)? | | | |
| 6. | Does the IEP contain a description of all special education and related services required to meet the student's needs? | | | |
| 7. | Does the IEP have a projected date for beginning the program and the anticipated duration of these services? | | | |

*Source: National Learning Resource Center of Pennsylvania. An introduction to individualized education program plans in Pennsylvania: Guidelines for school age IEP development. Harrisburg: Pennsylvania Department of Education, 1977.

# DUE PROCESS: PARENT RIGHTS AND STUDENT RIGHTS

## PARENTS' RIGHTS

*THE RIGHT to give or decline to give permission for the assessment of your child.

Written parental permission must be obtained before any evaluation activities are begun.

*THE RIGHT to give or decline to give permission for intervention activity or placement changes in your child's program.

Written parental permission must be obtained before any intervention activities or program changes can begin.

*THE RIGHT to review and inspect all records upon which educational decisions are made.

Parents may obtain a copy of such records at cost and you may request amendments be made to the data.

*THE RIGHT to obtain an independent evaluation of your child at your own expense and to seek outside sources of counsel.

Information gathered by persons not connected with the schools may be included for consideration in the decision making process.

*THE RIGHT to be fully informed, in written and oral form, of all proposed evaluation, placement and periodic review activities and decisions in the native language of the home.

Parents may have a friend or relative help with language differences, or the school can provide an interpreter if needed.

*THE RIGHT to have a conference with the school placement team regarding any aspect of the assessment or the educational placement procedures.

Parents may be shown the facilities and obtain a description of the program options, services provided and personnel available.

*THE RIGHT to an administrative review of the evaluation or the educational placement decision reached at the building level.

If parents question the program decision made by the placement team, the parent is entitled to an informal hearing with the school superintendent.

*THE RIGHT to an impartial due process hearing.

Any further disagreements may be presented to the Board of Directors and the parent may request an impartial due process hearing. The school district also has the right to request an impartial due process hearing.

## STUDENT'S RIGHTS

*THE RIGHT of a free and appropriate public education.

*ALL THE RIGHTS of the parents shall pass to the student who has reached 18 years of age except in cases where a child is legally determined under State statute to incompetent.

## Component 11 Program Placement Options

A central mandatory provision of federal and state legislation for education of the handicapped is that free, appropriate public education in the least restrictive environment be available to all handicapped individuals. The key concept in this provision is **appropriate** education. It is also important to recognize that the phrase "least restrictive environment" does not mean that all handicapped students should be mainstreamed into regular classrooms. For some handicapped students, the most appropriate placement may be the regular vocational classroom — full-time with supportive services available or for varied periods of time and for varied activities. But for other students, depending on the type and severity of their handicapping condition, the least restrictive environment may be a separate, special program placement.

The term "mainstreaming" has been used extensively and varied definitions have created some confusion regarding the meaning of the term. In some instances, "mainstreaming" has come to mean the wholesale return of handicapped students to regular programs or has tended to overshadow the basic theme of appropriate placement. Although mainstreaming is the ultimate goal in the educational planning for each handicapped student, the key guideline for program placement should be appropriate placement in the least restrictive environment that will best meet the individual educational needs of the student. In designing program placement alternatives, mainstreaming should be considered as only one of the alternatives available in a continuum of program placement options.

### RECOMMENDED ACTIVITIES

11.1 Mainstreaming "qualified" handicapped students into regular vocational courses is desirable wherever possible. Such integration may be appropriate for the student with a minor physical impairment or mild learning deficit. Mainstreaming may also be appropriate for the student with more severe handicapping conditions if adequate supportive services and an individualized instructional approach are available to assist the student. Factors that should be considered in the placement of students into regular vocational programs include:

- The student demonstrates the interest and the ability to succeed in a particular course:
  - The student's behavior is not a threat to either his/her own safety or that of others.
  - The student expresses interest in course.
  - Recommendations of former and current teachers indicate probable success.
  - Results of vocational aptitude and interest tests are positive.
  - Situational assessment has indicated adequate behavioral and basic skills performance.
- Special supportive services and modified equipment and instructional materials are available to the teacher and/or handicapped student.
- The regular vocational teacher exhibits a willingness to work with special needs students and is not overloaded with handicapped/disadvantaged students.
- Regular vocational teachers should have an opportunity to collectively plan ways in which the students can most effectively be integrated into a regular vocational class setting.

11.2 Program placement alternatives most often designed for the vocational education of handicapped students are presented in Figures 14 and 15 and include:

- Regular classroom with supportive services
- Regular classroom with resource room assistance

- Adapted vocational education
- Regular classroom with part-time special class placement
- Individual vocational training
- Full-time special class placement
- Work activity center

11.3 Define vocational placement alternatives available for handicapped students.

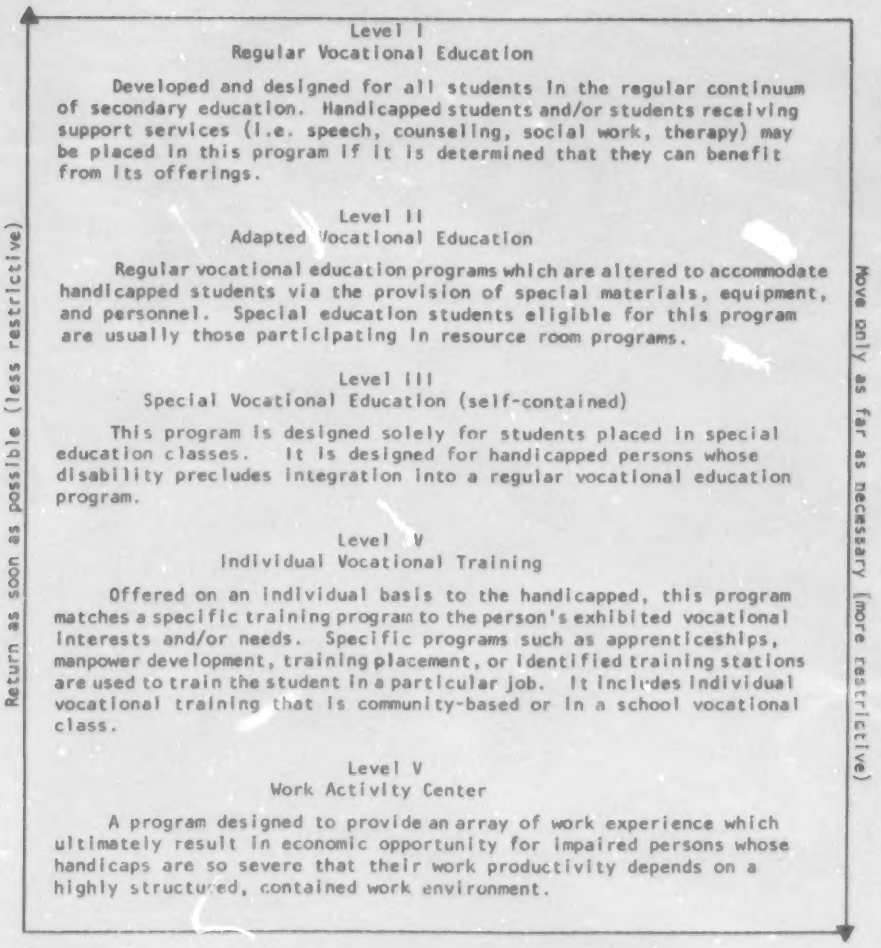
- Identify types of placement options available and describe basic expectancy of each placement alternative.
- Assess availability of each placement option for various types of handicapping conditions and levels of severity of disability.
- Placement options required to serve handicapped students should be determined at least annually on the basis of a review of IEP placement recommendations for current students and incoming students.

Figure 11
Vocational Placement Alternatives
for the Handicapped*

| | |
|---|---|
| Regular Vocational Education | Programming for all handicapped students who can benefit from the placement. Intended for all students who are receiving non-instructional special education services (speech, social work, occupational therapy, or special materials). |
| Adapted Vocational Education | Regular vocational programs are altered to accommodate special education eligible students who could not otherwise be placed in the program. This alternative may be needed for handicapped persons assigned to special education resource rooms who need adapted instruction. |
| Special Vocational Education | Training is usually of a semi-skilled nature (custodial training, etc.) or introductory skills training designed to provide prerequisite skills for entry into a regular vocational education sequence or to provide entry-level job skills. Usually limited to students in self-contained special education programs. |
| Individual Vocational Training | Training in special programs (CETA, apprenticeship, etc.) approved by a governmental agency, or a unique individual training program designed to fit a handicapped student's special interests and not generally available in the geographic area. |
| Work Activity Center Services | A program designed to provide work experiences for severely impaired individuals whose handicaps are so severe that their work productivity is restricted and dependent on a highly structured work environment. |

*Adapted from: Baxter, J. Development and Implementation of Secondary Special Education Programs. Lansing: Michigan Department of Education, 1975.

Figure 12
Vocational Placement Options
for Handicapped Students*


Return as soon as possible (less restrictive)
Move only as far as necessary (more restrictive)
Level I
Regular Vocational Education
Developed and designed for all students in the regular continuum of secondary education. Handicapped students and/or students receiving support services (i.e. speech, counseling, social work, therapy) may be placed in this program if it is determined that they can benefit from its offerings.
Level II
Adapted Vocational Education
Regular vocational education programs which are altered to accommodate handicapped students via the provision of special materials, equipment, and personnel. Special education students eligible for this program are usually those participating in resource room programs.
Level III
Special Vocational Education (self-contained)
This program is designed solely for students placed in special education classes. It is designed for handicapped persons whose disability precludes integration into a regular vocational education program.
Level IV
Individual Vocational Training
Offered on an individual basis to the handicapped, this program matches a specific training program to the person's exhibited vocational interests and/or needs. Specific programs such as apprenticeships, manpower development, training placement, or identified training stations are used to train the student in a particular job. It includes individual vocational training that is community-based or in a school vocational class.
Level V
Work Activity Center
A program designed to provide an array of work experience which ultimately result in economic opportunity for impaired persons whose handicaps are so severe that their work productivity depends on a highly structured, contained work environment.

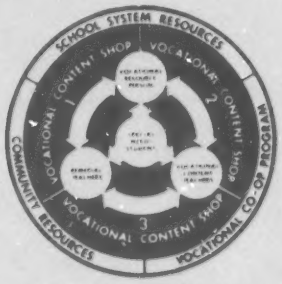
*Adapted from Moore, J. and Engleman, V. Administrators Manual: Programming for Handicapped Students at the Secondary Level: Responding to Public Laws. Salt Lake City: The Southwest Regional Resource Center, 1977.

Figure 13
Three Instructional Models For
Mainstreaming in Vocational Education*

The models are based on an integrated approach to mainstreaming developed by an instructional team and supported by vocational administrators, ancillary staff, community agencies and parents.

Model 1
Unit Model

This model represents the mainstreaming of a special needs student into an instructional program consisting of one vocational content area. The needed support services for the student are represented by the three inner circles and the outer circle. The three inner circles represent the instructional team. The outer circle represents the school system resources, community resources and the cooperative work experience program that may be utilized by the instructional team. An example of such a program might be a building maintenance shop with arithmetic skills developed by a remedial math teacher using vocational content and teaching this content in the vocational classroom.




Model 2
Cluster Model

Model 2 represents the second concept in vocational mainstreaming. This model is basically the same as Model 1 with the exception that the instructional program is a cluster of vocational content areas with the same basic skills. Within this model the instructional team has additional flexibility in allowing the special needs student the opportunity to select one or all of the vocational content shops in the cluster. An example of such a program might be home-health management where the student can learn additional specialized skills in health occupations or home economics occupations as the student's potential is identified.

Model 3
General Shop
Model

This model provides a general content shop as a basis for the special needs student's instructional program. The general content shop will be utilized by the instructional team as a special resource shop. Within this model the instructional team and the special needs student have the opportunity to utilize appropriate vocational content shops. This model has the greatest degree of flexibility for meeting the vocational education needs of special students since students can be moved in and out of the general shop as their abilities are identified and developed. A general vocational shop can contain basic components of any of the six vocational service areas. For example, a general vocational shop in business would include the many components of the business occupations program such as clerical and secretarial skills which would introduce the student to this area. From this program the student could move to the regular business program or develop other basic skills.

For these models to function successfully, the instructional system system should include: (1) Prescriptive, individualized instruction; (2) Student-instructional team to write learning prescription; (3) Competency-based evaluation; and (4) Open entry and exit.

*Felchtner, S. and T. O'Brien. A position paper on mainstreaming special needs students into regular vocational classrooms. Pittsburgh: University of Pittsburgh, 1976.

## Component 12 Selection of Instructional Materials

The educational progress of special needs students can be enhanced through the selection of appropriate instructional materials. There are a number of factors to consider in evaluating instructional materials for classroom use. These factors are of particular importance in attempting to meet the learning needs of disadvantaged and handicapped learners.

### RECOMMENDED ACTIVITIES

The following suggestions are presented as points to consider when evaluating and selecting instructional materials:

12.1 Instructional materials should be written at a level that the student can comprehend.

12.2 Instructional materials should include statements explaining the relevance and importance of the subject matter to the student.

12.3 Instructional materials should include objectives stated in behavioral terms and made known to the student.

12.4 Instructional materials should include appropriate pre-assessment materials to identify previously mastered skills of the student.

12.5 Instructional materials should be designed in a sequential structure that is logical in its sequence of content and level of difficulty.

12.6 Instructional materials should include instructional objectives that provide a variety of learning activities.

12.7 Instructional materials should include short-term post assessment activities to measure mastery of content skills.

Few, if any, instructional materials succeed in meeting all of these criteria. Teachers should select materials that satisfy as many of the points as possible and then supplement the materials to make them appropriate for instruction. These criteria should also be considered when teachers are developing their own materials for instruction.

**Sources of instructional media and materials for special needs learners:**

The federal government has provided financial support for a national network of media and materials centers. The national network includes the Instructional Materials Information Center (NIMIS), thirteen Area Learning Resource Centers, and four specialized offices. (See Appendix-Resource Directory)

Regional resource centers have been established in Pennsylvania to provide assistance to local education agencies in evaluation, selection, and development of special education instructional materials. Additional services are available to assist in meeting the instructional needs of students with special educational needs. In addition to providing assistance to special educators, the center services are available to regular educators working with special needs learners. Vocational educators should utilize the professional services available from the resource centers. Each vocational school should have a liaison person for ongoing communication with their regional resource center. (See Appendix-Resource Directory under Bureau of Special Education for resource center addresses for each region)

Figure 14
Specialized Instructional Materials: An example
Food Service: Unit 11 -- THE DINING ROOM, Lesson 9*

This example illustrates many of the criteria set forth for the selection of special instructional materials. Although originally developed for hearing impaired, the material is applicable also for special needs students with learning handicaps.

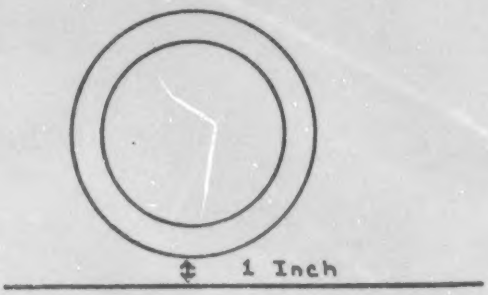
How To Set Each Cover — Lesson 9

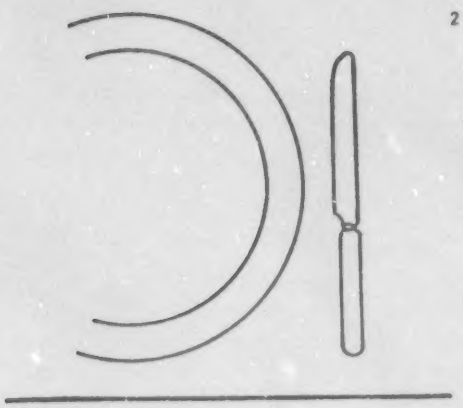
OBJECTIVE: To learn where the dishes, glassware, and flatware should be placed at each cover.

INFORMATION:

Now you will learn where each thing is placed at each cover.

1. The dinner plate is placed one inch from the edge of the table.

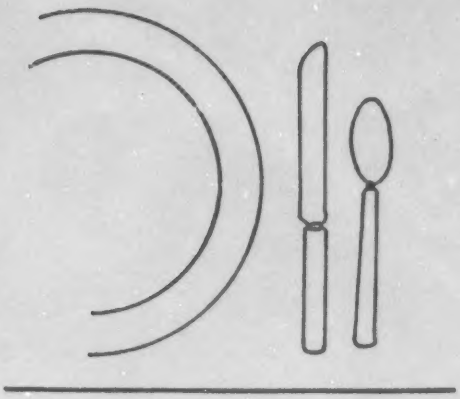


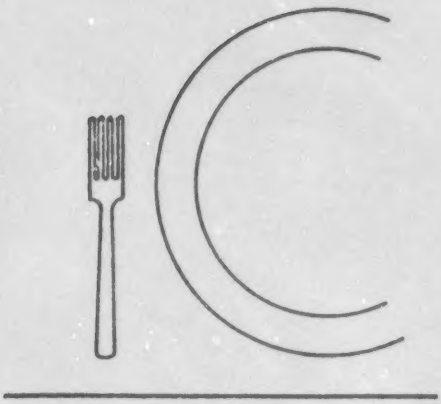



2. The knife is placed at the right of the dinner plate. The sharp edge of the blade is placed TOWARD the plate. The knife is also one inch from the edge of the table.

*Source: B. K. Furneisen, Food Service (Revised Edition), New Brunswick, New Jersey: Rutgers--The State University, Vocational-Technical Curriculum Laboratory, 1978.

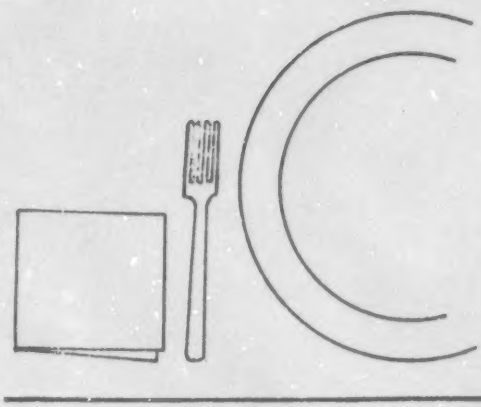
3. The teaspoon is placed at the right of the knife. It is one inch from the edge of the table.



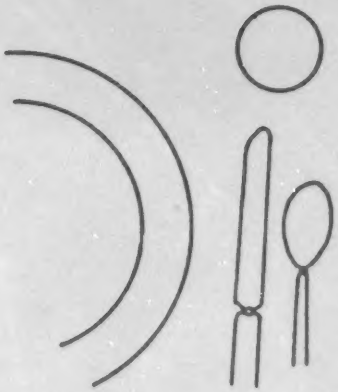


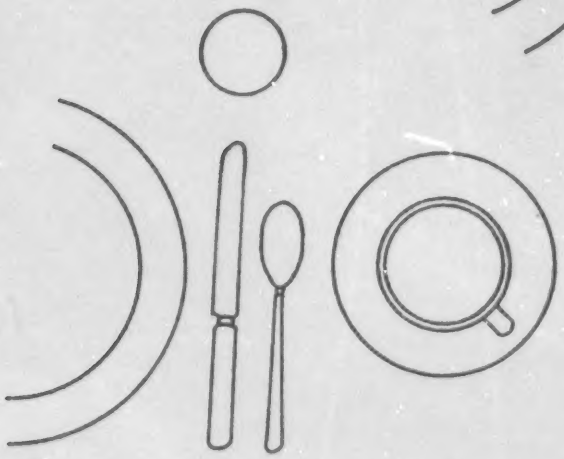
4. The fork is placed at the left of the dinner plate. It is one inch from the edge of the table. Be sure the tines of the fork are turned up.

5. The napkin is placed at the left of the fork. The open corner of the napkin should be placed at the lower right and about one inch from the edge of the table.



6. The water or milk glass goes at the top of the knife. Leave a one-inch space between the knife and the glass.



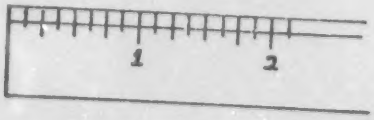


7. The cup and saucer should be put at the right of the teaspoon. The cup should be even with the bowl of the spoon. The handle of the cup should turn toward the edge of the table just a little.

VOCABULARY:

place (plās) - to put something in the right way.

inch (inch) - a certain space.




toward (tôrd) - near or facing something.

ASSIGNMENT:

1. How far from the edge of the table should the dinner plate and flatware be placed?

2. How should a napkin be put on the table?

3. On what side of the dinner plate do you put the knife and the teaspoon?

4. Where do you put the glass?

5. Are cups and saucers placed near the teaspoon or near the fork?

## Component 13 Modification of Instructional Techniques

Teachers with special needs learners in their classrooms should consider instructional adaptations and adjustments that will allow the student to meet class standards of performance. Guidelines should be developed and provided to teachers for their consideration in instructing the learner with special needs.

### RECOMMENDED ACTIVITIES

13.1 Develop and distribute to instructional staff a descriptive checklist of functional limitations that may affect the classroom performance of handicapped and disadvantaged students.

13.2 Develop and distribute to the instructional staff a checklist for classroom procedures which will assist a student to compensate for his Vocational handicap.

13.3 Develop guidelines for the selection and modification of instructional materials to meet the individual needs of the special needs student.

*Note:* Specialized instructional materials provided should be used by all students in the classroom. This encourages the use of materials and the integration of the special needs learner into the classroom environment.

13.4 Instructional techniques helpful for teaching special needs students:

**Adaptations for students with educational and learning handicaps**

- Step-by-step instruction: provide instructions as a series to complete. If the student is unable to understand the series of directions, give one step of the instructions at a time.
- Work from concrete to abstract: emphasize the concrete and literal in instruction rather than abstract and theory. Begin hands-on experience and keep required textbook work to a minimum.
- Use classroom demonstrations: emphasize demonstrations to reinforce verbal instructions and explanations. After demonstrating a procedure, permit students to complete task.
- Provide adequate time to complete tasks: instructional tasks, when possible, should give students ample time to complete a task rather than put the student in a time situation. A timed environment to complete tasks often results in anxiety and an increase of errors.
- Use a variety of teaching techniques: the teacher should adapt teaching methods to the instructional needs of the students.

**Adaptations for hearing impaired students**

- The teacher and deaf student should cooperatively develop some signs to ease communication difficulty.
- Limit the use of words that have multiple meaning when talking to hearing impaired students that lip-read.
- Speak naturally and in a normal tone of voice. Maintain visual contact with the student when conversing.
- Do not cover your mouth when speaking.
- Instead of repeating a word that is not understood change to a word that is understood by the student.
- When possible, use visual clues when verbally interacting with the hearing impaired student.
- Make extensive use of visual aids: charts, overhead transparencies, slides, captioned films.

- Select materials written at a lower level of reading difficulty: some excellent materials especially designed for the hearing impaired have been developed by commercial publishers. Instructional materials developed for the educable mentally retarded/educationally handicapped may also be appropriate for use with the hearing impaired.
- Prepare written versions of taped materials.
- Modify cassettes accompanying programmed instructional materials. Use two-stage process: prepare written version of taped material, simplify the reading level as needed for use with the students.
- Reduce the level of reading difficulty of regular instructional materials.
- Prepare glossary of vocabulary words essential for the mastery of a particular vocational course with terminology at appropriate reading level.

**Modifications for Visually Impaired**

- Make extensive use of records and tapes.
- Select braille, thermo-formed or large print versions of regular instructional materials.
- Prepare tape versions (or records) of written materials: volunteer service agencies will tape textbooks free of charge for the visually impaired.
- Use Volunteer reader (student or adult) who will read material to student on an individual basis.
- Prepare taped version of written tests with the student typing or taping the answers or administer the tests orally to the student.

**An Example: Modification of Instructional Techniques**
**Cook/Chef: Converting Recipes Test**

Test #1 was prepared to assess the "average" student's knowledge of converting recipes and is presented in Figure 15. Test #2 was developed for evaluating the special needs student's ability to convert recipes and is provided in Figure 16. Comparison of the two tests reveals modifications on Test #2 designed to compensate for cognitive and computational limitations of the student with learning deficits. The modifications made are as follows:

#1. Directions are written for the "average" student.

#2. Directions are given orally to the students and, if necessary, repeated to individual students.

#1. Students must know how to convert galions to ounces.

#2. Students are given concrete directions for converting gallons to ounces.

#1. Students must know multiplying factor ratio.

#2. Students are given multiplying factor.

#1. Students must complete 30 problems in the time allotted.

#2. Students have fewer problems (24) to complete in allotted time.

#1. Problems involve computation for 27 portions.

#2. Problems require computation for fewer (16) portions.

#1. Problems require ability to deal with both whole numbers and fractions.

#2. Problems made up primarily of whole numbers.

Modifications in test construction such as those presented above provide the instructor with information concerning the special needs learner's grasp of the basic concepts presented in the lesson on converting recipes. At the same time, the individual with learning deficits is not penalized because of concrete cognitive skills, restricted concentration, limited memory and recall, and/or computational deficits (dealing with fractions). As a result of the modified test, the instructor obtains desired information on the student's knowledge of the basic concepts and the special needs learner completes a successful learning activity.

The modification of instructional methodology should not be a random process. When modifying instructional materials and assessment instruments for individuals with learning deficits, a number of factors should be considered by the instructor. Factors that should receive attention are:

1. Cognitive level (abstract vs. concrete)
2. Complexity level (simple vs. complex tasks)
3. Quantitative level (few vs. numerous tasks)
4. Time variable (timed vs. power test)
5. Achievement level (low vs. average vs. high — reading, math, etc.)

Figure 15
Parkway West Area Technical School
Cook/Chef #1
Converting Recipes

Name_____ Score_____

Vegetable Soup Yield = 4-3/4 Gal. _____

Multiplying Factor = _____ serving size = 7 oz.

| | _____ Portions | | 27 Portions |
|---|---|---|---|
| 1. | 1½ lbs. _____ carrots | 1. | _____ or _____ carrots |
| 2. | 1 lb. 9½ oz. _____ celery | 2. | _____ or _____ celery |
| 3. | 1 lb. 7 oz. _____ onions | 3. | _____ or _____ onions |
| 4. | 1 lb. _____ cabbage | 4. | _____ or _____ cabbage |
| 5. | 6 oz. _____ shortening | 5. | _____ or _____ shortening |
| 6. | 3-3/4 gal. _____ beef stock | 6. | _____ or _____ beef stock |
| 7. | 3/4 gal. _____ tomatoes | 7. | _____ or _____ tomatoes |
| 8. | 3 oz. _____ salt | 8. | _____ or _____ salt |
| 9. | 1½ oz. _____ garlic | 9. | _____ or _____ garlic |
| 10. | 1/2 tsp. _____ pepper | 10. | _____ or _____ pepper |
| 11. | 1¼ lb. _____ peas | 11. | _____ or _____ peas |
| 12. | 3/4 lb. _____ corn | 12. | _____ or _____ corn |
| 13. | 1 pt. _____ lima beans | 13. | _____ or _____ lima beans |
| 14. | 1¼ qts. _____ green beans | 14. | _____ or _____ green beans |
| 15. | 1¼ cup _____ barley | 15. | _____ or _____ barley |

There are 48 possible answers for a point value of 2.08 each. This test will not be accepted without showing your work on the back of this sheet. You are to use "NO" other method to solve this problem other than what we did in class. I repeat NO other method is to be used to solve this test than what I taught in class; if you do your answer will be counted wrong.

Figure 16
Parkway West Area Technical School
Cook/Chef
Converting Recipes #2*

Name _____ Date _____

Mock Turtle Soup Yield 3 Gal. (or _____ oz.)

(Multiply number of gallons X how many oz. in 1 gallon)

Each serving size will be 8 oz.

(Divide total number of oz. by the serving size)

Multiplying Factor = $\frac{\text{Number of portions you want to make}}{\text{Number of portions recipe calls for}}$ = _____

Multiplying Factor = _____

| | _____ Portions | | 16 Portions |
|---|---|---|---|
| 1. | 6 lbs.___oz. calf & Veal Shanks | 1. | ___oz. or ___ lbs. calf & veal |
| 2. | 3 gal.___oz. brown stock | 2. | ___oz. or ___ gal. stock |
| 3. | 12 oz. shortening | 3. | ___oz. shortening |
| 4. | 8 oz. flour | 4. | ___oz. flour |
| 5. | 4 lemons, peeled & diced | 5. | ___ lemons |
| 6. | 8 oz. carrots, minced | 6. | ___oz. carrots |
| 7. | 4 oz. celery, minced | 7. | ___oz. celery |
| 8. | 8 oz. onions, minced | 8. | ___oz. onions |
| 9. | 4 hard boiled eggs | 9. | ___ hard boiled eggs |
| 10. | 1 pt. ___oz. sherry wine | 10. | ___oz. or ___ pts. wine |
| 11. | 1 bay leaf | 11. | ___ bay leaf |
| 12. | 1/2 tsp. thyme | 12. | ___ tsp. thyme |

*Source: D. DiMartino, Learning Facilitator, Parkway West Area Technical School, Oakdale, PA.

## An Example: Retail Cuts of Beef Test

Many instructors use the Retail Cuts of Beef chart designed by the National Life Stock and Meat Board to teach the location and cuts of beef. Test #1 (Figure 17) was developed to assess "average" students knowledge of the lesson. On this test, the students may be required to provide the location of the cut of beef or, given the location, to identify the various beef cuts. Test #2 is provided in Figure 18 as an example of a modification of the beef test for evaluating special needs students' acquired knowledge of the learning activity.

The modified test is simplified to include fewer test items (the most common cuts) and visual clues are provided for the student. The instructor may give additional tests over a period of time to cover other beef cuts or may only require knowledge of basic information. The modified test considers the special needs learner's cognitive level (concrete) and ability to acquire and retain large amounts of information. The instructor should consider the ability levels of the student to be evaluated before devising instructional and evaluative methods. Just as activities that are too difficult result in frustration and failure for the student, activities that are too easy or look like they are for "grade school" kids may result in frustration and resentment on the part of the students.

Figure 17

**BEEF CHART #1**

NAME Answer Key

## RETAIL CUTS OF BEEF

**CHUCK**
- [2] Boneless Chuck Eye Roast
- [3] [4] Chuck Short Ribs
- [2] Blade Roast or Steak
- [3] Arm Pot Roast or Steak
- [3] Boneless Shoulder Pot Roast or Steak
- [4] Cross Rib or Pot Roast
- [1] Beef for Stew
- [1] Ground Beef

**RIB**
- [2] Rib Roast
- [2] Rib Steak
- [2] Rib Steak, Boneless
- [2] Rib Eye (Delmonico) Roast or Steak

**SHORT LOIN**
- [2] T-Bone Steak
- [3] Porterhouse Steak
- [1] [2] [3] Boneless Top Loin Steak
- [2] [3] Tenderloin (Filet Mignon) Steak or Roast

**SIRLOIN**
- [1] Pin Bone Sirloin Steak
- [2] Flat Bone Sirloin Steak
- [3] Wedge Bone Sirloin Steak
- [1] [2] [3] Boneless Sirloin Steak

**ROUND**
- [1] Boneless Rump Roast (Rolled)
- [4] Heel of Round
- [3] Round Steak
- [3] Top Round Steak
- [3] Bottom Round Roast or Steak
- [3] Cubed Steak
- [3] Eye of Round Ground Beef

**FORE SHANK**
- [1] Shank Cross Cuts
- [2] Beef for Stew

**BRISKET**
- [3] Fresh Brisket
- [3] Corned Brisket

**SHORT PLATE**
- [1] Short Ribs
- [1] [2] Skirt Short Ribs
- [1] [2] Beef for Stew
- Ground Beef

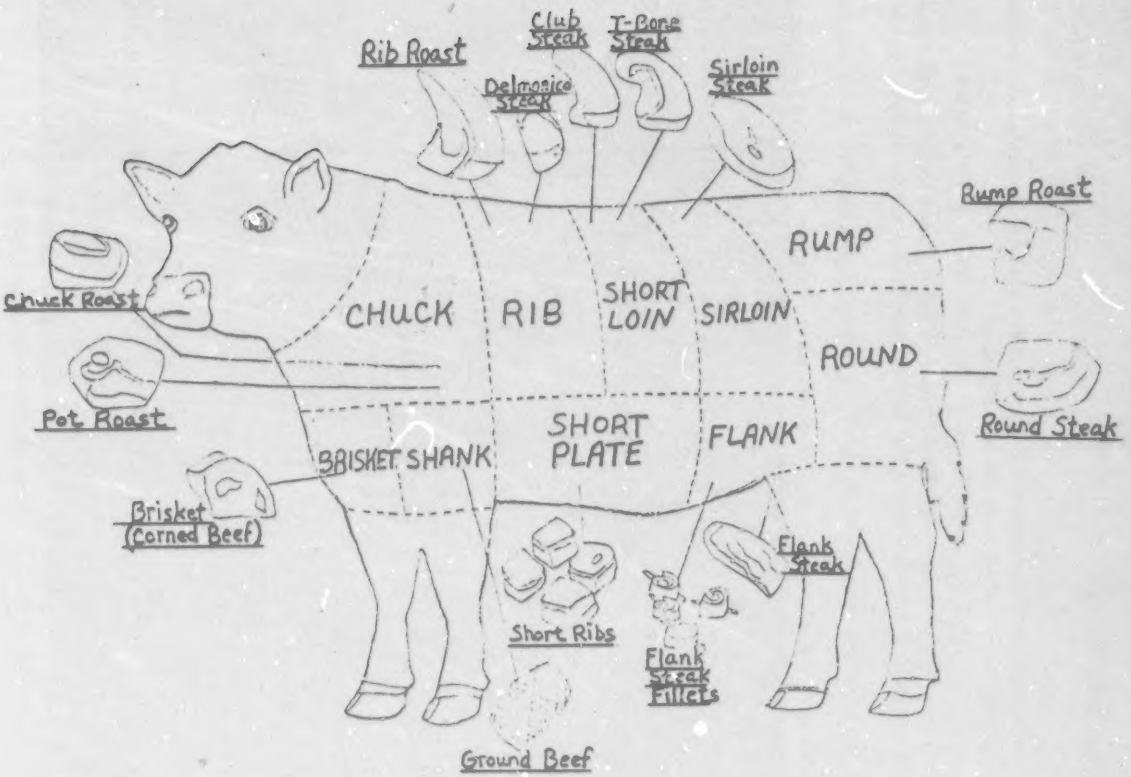
**FLANK**
- [1] Flank Steak
- [1] Flank Steak Rolls
- Beef Patties
- Ground Beef

**TIP**
- [2] [4] Tip Steak
- [2] [4] Tip Roast
- [2] [4] Tip Kabobs

Figure 18

BEEF CHART #2

NAME Answer Key



## Component 14 Modification of Facilities and Equipment

The physical facilities and equipment in classrooms and labs can be barriers which prevent some students from participating in vocational education programs. It is essential that efforts are made to design and equip vocational facilities to accommodate handicapped students.

### RECOMMENDED ACTIVITIES

14.1 Collect information on recommended architectural standards, equipment modifications and special devices available to accommodate the handicapped.

14.2 Complete a survey of vocational classrooms and laboratories to determine the extent that existing facilities and equipment are barriers to the handicapped. The survey should include:

- data on potential enrollment of handicapped requiring facility and/or equipment modification;
- identification of existing facility and equipment barriers and recommendations (including priorities and estimated costs) for their modification.

14.3 Procedures should be established to assure program accessability to handicapped individuals. Although structural changes need not be made in existing facilities when other methods are appropriate in achieving compliance, alternative methods should be provided in the most integrated setting possible. Program accessibility may be achieved through methods such as:

- Redesign of layout of laboratory (wider aisles, non-skid walkways, etc.).
- Redesign of equipment.
- Use of supportive personnel (aides, etc.) to assist students.
- Modification of safety equipment.
- Alteration of existing facilities (accessible toilets, ramps, etc.).

14.4 Construction of any new facilities must be constructed so that the building is accessible to handicapped. Alterations to existing facilities must also comply with federal legislation requiring accessibility for the handicapped (PL 94-482; PL 93-112, Section 504).

### SOME EXAMPLES OF EQUIPMENT MODIFICATIONS FOR THE HANDICAPPED

Much of the equipment used in vocational skill preparation classes by "regular" students can also be used by handicapped students without any or only minor modifications. Equipment modifications that have been found helpful to accommodate handicapped students are as follows:

**Hearing Impaired**

- A red light connected to the switch indicating when the machine is in operation.
- Bells connected to a light that turns on when the bell rings. This is applicable on typewriters, class bells, timers, fire alarms, emergency procedures, etc.

**Visually Handicapped**

- An orderly laboratory and individualized instruction regarding the use of each piece of equipment is essential.

- Control dials and switches are easily accessible.
- Special control dials with the actual rather than visual markings — brailled tape or raised marks can be used.
- Auditory rather than visual warning signals.
- Guard plates (where feasible) on power equipment.
- Specially designed communication and measuring tools and other devices are available and should be considered for the visually impaired student on an individual basis.

**Orthopedically Handicapped**

- Guard plates (where feasible) on power equipment.
- Machine switches on power equipment may need to be moved for easier accessibility.
- Semi-stationary equipment should be put on variable height bases.

## SELECTED RESOURCES ON EQUIPMENT MODIFICATION

American Foundation for the Blind — **Aids and Appliances for the Blind and Visually Impaired.**
A catalogue of tools, timers, and other objects of potential use in vocational programs. Updated annually. American Foundation for the Blind, 15 West 16th St., New York, NY 10011.

Bell Telephone System — **Service for Special Needs.**
A listing of telephone equipment available through the Bell System for a deaf, hard-of-hearing, and physically handicapped. Available from telephone company business office.

Library of Congress — **Aids for Handicapped Readers.**
A reference circular describing reading aids for the blind and physically handicapped. Write: Library of Congress, Reference and Information Section, Division for the Blind and Physically Handicapped, Washington, DC 20542.

**Recommended Aids for the Partially Sighted** — Louise L. Sloan, 1966.
Available from the National Society for the Prevention of Blindness, Inc., 79 Madison Avenue, New York, NY 10016.

## SELECTED RESOURCES ON ARCHITECTURAL BARRIERS AND EQUIPMENT DESIGN

American National Standards Institute. **American National Standard Specifications for Making Buildings and Facilities Accessible to, and Useable by the Physically Handicapped.** New York: American National Standards Institute, 1971.

Augler, A.A. and Woodson, W.E. **A Pilot Study of Selected ROP Curricula and Facilities to Determine Their Appropriateness and Accessibility for Orthopedically Handicapped Students.** San Diego, CA: Department of Education, San Diago County, 1975.

Frank, K. **Architectural Barriers to Physically Disabled Persons in Wisconsin's Vocational and Adult Education System.** Menomonie, WI: Center for Vocational, Technical, and Adult Education, University of Wisconsin — Stout, 1975.

Goldsmith, S. **Designing for the Disabled.** London, England: Royal Institute of British Architects, 1967.

Mace, R.I. **Accessibility Modifications: Guidelines for Modifications to Existing Buildings for Accessibility to the Handicapped.** Raleigh, NC: Department of Insurance, 1976.

Tica, P. and Shaw, J.A. **Barrier-free Design: Accessability for the Handicapped.** Institute for Research and Development in Occupational Education, 1974.

U.S. Department of Housing and Urban Development. **Barrier Free Site Design.** Washington, DC: U.S. Government Printing Office, 1976.

## Component 15 Supportive Services

Supportive (Related) services should be available to assist handicapped and disadvantaged students to maximize their benefit from participation in vocational education. To assure appropriate support services, special needs administrators should actively seek cooperative arrangements with special education, vocational rehabilitation and outside agencies that provide supportive services for the provision of services required to facilitate the handicapped students progress in vocational education.

The most often listed supportive services provided in Vocational Education include:

1. Supportive instruction for individual students in the vocational content areas.
2. Supportive educational services such as reader and/or guide for the blind, interpreter services for the deaf, attendant for the physically handicapped, etc.
3. Individual or small group remedial instruction in basic academic skills.
4. Specialized vocational counseling (for students and parents)
5. Specialized job placement and follow-up services.
6. Contracting with outside agencies to provide specialized services which the vocational program cannot provide for individual students.

Because special needs vocational education is a complex process, a number of vocational programs are utilizing a vocational resource person or learning facilitator as a supportive service staff member to assist vocational teachers and counselors in developing appropriate programs, to aid in the coordination between vocational education programming and special education instruction, and to provide assistance to students and parents.

### RECOMMENDED ACTIVITIES

15.1 A study should be completed to determine the availablilty of supportive services for students in vocational education. The study should include services available for students from special education, pupil services, and other school district or intermediate unit programs as well as vocational rehabilitation and other community agencies. For example, the following is a partial listing of services that may be provided by vocational rehabilitation:

- Evaluation (medical, psychological, vocational)
- Physical restoration
- Therapeutic services
- Prosthetic devices
- Tools, equipment, licenses
- Employment training
- Counseling
- Transportation
- Job placement

15.2 Identify and establish procedures for obtaining supportive services for individual students

15.3 Assess current need for various types of supportive services on the basis of IEP recommendations for the handicapped students in vocational education. This activity should be conducted at least annually so that necessary planning and arrangements can be completed each new school year.

15.4 Procedures should be established to evaluate the effectiveness of supportive services personnel.

## Component 16 Vocational Placement

Cooperative education should be available as a part of the student's vocational program. The cooperative education program should reflect the local occupational needs and include provisions for meeting state and federal regulations regarding handicapped students. When possible, the cooperative education experience should complement the vocational skill training completed by the student. The student's abilities, and limitations should be considered in the determination of an appropriate work placement.

### RECOMMENDED ACTIVITIES

16.1 Job placement personnel should actively engage in activities to identify employers willing to work with handicapped and disadvantaged.

16.2 Employers should be provided information regarding employment of the handicapped (insurance, benefits of hiring, accommodations necessary, if any, for the handicapping conditions, etc.)

16.3 Cooperative education personnel should be aware of procedures involved in IEP development process so as to assure compliance with state statutes (e.g., parental permission, inclusion of cooperative work experience plan in IEP, involvement of other school personnel, etc.).

16.4 Placement personnel should have a knowledge of handicapped and disadvantaged students and accommodations that can be provided to aid the student in gaining a successful work experience (adaptive equipment; supportive services, e.g. tutoring to improve deficit skill area; travel training).

16.5 Cooperative education placements should be monitored closely to assure early intervention when problems, if any, arise. Often minor problem areas lead to greater problems and early intervention prevents the early termination of the job placement.

16.6 Employers should be made aware of any limitation the student may have as a result of disadvantagement or handicapping condition.

16.7 Students should be provided information on progress and feedback on performance on a regular basis.

16.8 In some instances, when further information is desired to determine student ability or readiness, preplacement assessment should be completed. Employers that have one negative experience are less likely to consider any future cooperative placements for learners with special needs.

16.9 Because social-emotional skills, attitudes, and work habits are more often problem areas than entry-level job skills, evaluation instruments should include assessment of these areas. An example of an evaluation instrument designed to assess these areas is presented in Figure 19.

Figure 19
Service Station Attendant
OJT Assessment Form*

Student Name: _____ Date: _____

Training Area: _____ Home School _____

Mr.
Ms. _____, please evaluate the performance of the above student during the period _____ to _____. If you have additional comments or suggestions, please include them at the bottom or on the reverse side of this page.

**Basic Work Habits and Attitudes**

| | (Low) | | | | (High) |
|---|---|---|---|---|---|
| Punctuality: | | | | | |
| arrival | 1 | 2 | 3 | 4 | 5 |
| breaks | 1 | 2 | 3 | 4 | 5 |
| Neatness and cleanliness | 1 | 2 | 3 | 4 | 5 |
| Following instructions | 1 | 2 | 3 | 4 | 5 |
| Accepting criticism | 1 | 2 | 3 | 4 | 5 |
| Accepting responsibility | 1 | 2 | 3 | 4 | 5 |
| Showing initiative | 1 | 2 | 3 | 4 | 5 |
| Rights & property of others | 1 | 2 | 3 | 4 | 5 |
| Peer & staff interaction | 1 | 2 | 3 | 4 | 5 |
| Overall production | 1 | 2 | 3 | 4 | 5 |
| Other: _____ | 1 | 2 | 3 | 4 | 5 |
| _____ | 1 | 2 | 3 | 4 | 5 |

Comments:

**Specific Job Skills**

| | Speed | | | | | Accuracy | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Opening Station | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Pumping gas | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Cleaning windshield | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Checking oil | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Checking water | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Checking transmission fluid | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Checking air | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Checking battery | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Cash transactions | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Personal checks | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Gasoline credit cards | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Master Charge | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Bank Americard | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Cleaning restrooms | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Cleaning station | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Receiving deliveries | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Closing Station | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Other: _____ | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

*Source: Adapted from Madsen, G.A. Programming vocational skills for the handicapped. Ellensburg: Central Washington State College, 1975.

## Component 17 Publicizing Program Availability

It should be the responsibility of the special needs program administrator to plan a recruitment program to encourage eligible in-school and out-of-school special needs individuals to enroll in vocational education programs. Procedures should also be adopted to assist vocational staff in modifying courses, where necessary, so as to enhance the probability of a successful learning experience for disadvantaged and handicapped individuals (see components 12, 13, 14).

### RECOMMENDED ACTIVITIES

17.1 Gather baseline data on utilization of vocational programs by special needs students

- Compare data on actual number of disadvantaged served in vocational programs with the total disadvantaged population in the public schools of the school district(s) in the vocational school attendance area.
- Compare data on the actual number of handicapped, by disability categories, in vocational programs (both regular and special) with the total number of handicapped in the public schools of the vocational school attendance area.
- If underenrollment exists: survey guidance, vocational and special education staffs, and regular school personnel to determine probable causes for low enrollment.

17.2 Inform guidance counselors, special education staff, students and parents of the availability of vocational education opportunities for special needs students and the availability of supportive services, special programs, and curricular/equipment modifications to assist the special needs learner.

17.3 Procedures should be adopted to publicize that vocational education is available for handicapped and disadvantaged students. Activities often used to publicize programs are:

- Provide career and vocational information to students in the elementary and junior high school grades.
- Develop printed materials on programs and services available and send to community agencies and organizations, advocacy groups, and parents.
- Give presentations at schools to students, to parent groups, to school staff inservice meetings, and to community groups.
- Provide periodic information to media on program goals and achievements.

17.4 Develop procedures for publicizing availability of vocational education to eligible out-of-school disadvantaged and handicapped individuals as prescribed by federal statutes (PL 94-482 and PL 93-112, Section 504). Activities often used are:

- Provision of information through media concerning eligibility and programs available.
- Develop referral sources through active collaboration with community agencies and organizations.
- Provide information to parent and advocacy groups for the handicapped so that they can inform individuals of the availability of vocational programs.

17.5 Local district or intermediate unit special education administrators should be contracted on at least an annual basis to gain updated information on the identification and location of in-school and out-of-school handicapped in the vocational school attendance area.

Figure 20
Potential Referral Sources In The Community For
Identifying Unserved, "Dropouts," And Older Special Needs Students

The resourcesful special needs administrator will find a number of referral channels in the community. Examples of potential sources of referral are:

1. Self referral
2. Families and friends

} Become aware through the publicizing of vocational education programs.

3. Vocational Rehabilitation
4. Institutions (public and private)
5. Social agencies (family, welfare, county health)
6. Physicians
7. Health agencies (state)
8. Employment agencies
9. Sheltered workshops and group homes
10. Interested persons in community
11. Juvenile Court
12. Hospitals
13. Voluntary agencies working with handicapped
14. Community groups (social-fraternal organizations, civic groups, and citizen groups)

Figure 21
Checklist Of Potential Barriers To
Appropriate Programming For Special Needs Students

Personnel

____ 1. Vocational staff lacks knowledge in how to work with special needs students.

____ 2. Vocational staff hesitant to accept special needs students.

____ 3. Lack of qualified staff to instruct special needs class.

____ 4. Lack of supportive services staff to assist regular vocational staff.

Facilities and Equipment

____ 1. Vocational laboratories not accessible to physically handicapped and other mobility impaired students.

____ 2. Excessive class sizes discourages additional enrollment.

____ 3. No time period set aside in vocational laboratories for special needs class.

____ 4. Lack of modified equipment to accommodate special needs students.

Curriculum and Instruction

____ 1. Lack of specialized instructional materials.

____ 2. Lack of modified curriculum materials.

____ 3. Lack of specialized equipment to aid instruction with specific disabilities, e.g., blind, deaf.

____ 4. Lack of instructional coordination between regular vocational staff and special education staff.

## Component 18 Fiscal Management and Funding

Funding to meet basic programs costs for special needs vocational education should be provided from state and local revenues. The basic funding may be supplemented by additional monies from federal funding sources. In addition, some programs have obtained supplemental funding through outside resources such as foundations, industry and business.

A fiscal management system should be established that is in compliance with state and local requirements for fiscal accountability and accounting procedures. The fiscal management system should be developed to include record keeping that will permit a cost/benefit analysis as part of the program product evaluation component designed to obtain program impact data.

### RECOMMENDED ACTIVITIES

18.1 Personnel responsible for the management of funds and expenditures should be identified so that the educational costs for providing programs and services to special needs students may be accounted for in an effective manner. Activities should include:

- Knowledge of state requirements for maintenance of records on funding for handicapped and disadvantaged for the purpose of reporting expenditures to the state.
- Procedures should be established to keep special needs vocational expenditures separate from general vocational education expenditures. This permits:
  - Data for providing information to state agencies
  - Effective source of date for cost/benefit analysis.
  - Consideration of fiscal date in determining program priorities and in making program decisions.

18.2 Efforts should be made to develop a coordinated approach, both intra-agency and inter-agency, to obtain supplemental funds from federal agencies and outside sources.

- Sources of outside funding should be identified and procedures should be established for developing proposals and grants for supplemental funding.
- Information should be obtained on state rules and regulations governing the allocation and expenditure of state and federal funds.

### Outside Funding Sources*

A comprehensive vocational education program has many needs which may not be met by local tax monies. Alternate sources of funds for special programs, equipment, facilities, and research are outside funding agencies: business, industry, and foundations. The following are a number of useful resources available to program planners to aid in the search for outside funding:

**Aid to Education: Programs of Some Leading Business Concerns,** Council for Financial Aid to Education, Inc., 680 Fifth Avenue, New York, NY 10019, $7.00.

List the offices and individuals of many of the major business concerns and corporations having all philanthropic programs.

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*The resources presented in this section were adapted from Asche, F.M. and J. Dixon, "Extramural Funding Sources for Vocational Education." A paper presented at the 72nd Annual Convention of the American Vocational Association, December, 1978.

**American Education**, DHEW/USOE, American Education, P.O. Box 9000, Alexandria, VA 22304, $13.50/yr.

The official journal of the U.S. Office of Education published ten times a year lists activities supported, who may apply, where to apply, the authorizing legislation and the overall objective of the legislation grouped into appropriate areas.

**Catalog of Federal Domestic Assistance (CFDA)**, Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, $18.00.

A listing and description of federal programs available to public and private institutions and individuals. Six indexes of the catalog provide listings for such as vocational education, grants, loans, scholarships, federal property, facilities, equipment, and donation of surplus property.

Lewis, Marianna O., editor **The Foundation Directory, 6th edition**, New York: Columbia University Press, 1977.

The **Directory** provides four indexes: (1) Fields of interest; (2) State and city locations; (3) Personnel (names of donors trustees, and administrators); and (4) Foundation names. Vocational education is listed in the fields of interest.

Noe, Lee, grants editor, **The Foundation Grants Index**, New York: Columbia University Press.

The **Grants Index** is one volume formed from the six bimonthly issues of the **Foundation News** for a calendar year.

**United States Government Manual**, Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, $6.50.

The official handbook of the federal government is published by the Office of the Federal Register. The manual describes the purpose of programs and list key personnel of many of the government agencies.

Private foundation funds are available for vocational education services and programming. Some examples of foundation to vocational education are listed below.

| Foundation | Grant | Purpose |
|---|---|---|
| General Mills Foundation | $ 5,000 | Conference on Vocational Education |
| Mott (Charles Stewart) Foundation | $15,000 | Summer jobs for students in high school vocational education classes |
| Pittsburgh Foundation | $ 9,588 | Audio-visual equipment |
| Moody Foundation | $40,000 | Building project for vocational high school program for severely handicapped |
| Springs (Elliott White) | $64,000 | Vocational Education Center |

Other foundations providing grants for vocational related services include: Starr Foundation, Carnegie Corportation of New York, Kellogg (W.K.) Foundation, Ford Foundation, and the Bremer (Otto) Foundation. The following foundations list vocational education as a major area of funding:

Wilkie Brothers Foundation
254 North Laurel Avenue
Bes Plaines, IL 60016

Alden (George I.) Trust
370 Main Street, Suite 1250
Worcester, MA 01608

ASARCO Foundation
120 Broadway
New York, NY 10005

deHirsh (The Baron) Fund
386 Park Avenue South
New York, NY 10016

Rosenthal (The Samuel) Foundation
c/o Leighton A. Rosenthal
1768 East 25th Street
Cleveland, OH 44112

# 4. Program Evaluation

## Component 19 Program Evaluation

Systematic program evaluation should be designed and completed to assess the ongoing operational aspects of the program and the impact of the overall program on the students and the community. Process (formative) evaluation is essential to the effective operation of a special needs vocational education program. Periodic revision of curriculum and operational procedures is necessary if the program is to be responsive to the needs of the students. Data obtained from process evaluations permits informed decisions and planning concerning needed modifications in the program.

Product (summative) evaluation provides information concerning the impact of the program. Employer and former student follow-up and cost/benefit analysis are primary sources of data on program effectiveness in meeting the needs of the students and the community. The planning of product evaluation should address a number of areas of concern. The areas of concern most often investigated are as follows:

- What kinds of employment do program graduates hold?
- How well do program graduates perform on their jobs?
- What competencies and skills do students acquire in the program that prepare them for employment?
- To what extent does the program demonstrate the efficient and effective use of resources?
- What is the impact of the program on other programs and/or agencies?

Evaluation questions to obtain information on these areas of concern provide a baseline of pertinent data for assessing the success of vocational education programming for special needs students. In addition to the areas of concern listed above, the product evaluation should be designed to assess success in meeting each of the program objectives.

Program evaluation, particularly product evaluation, is an often overlooked aspect of programs. Evaluation may be minimal or hastily designed, as an afterthought, after the program has been in operation for some time. For a systems approach to educational programming to be effective, the program evaluation design should be developed as a parallel activity to program planning. This serves to ensure that process evaluation instruments are available to monitor program progress and to provide information on the need for modifications and revisions in the operation of the program. In addition, it helps to ensure that product evaluation will be designed to measure attainment of program goals and objectives.

### RECOMMENDED ACTIVITIES

19.1 Program evaluation should be developed to include state requirements for maintenance of records and evaluation activities. Knowledge of state requirements and their inclusion in the program evaluation design aids in reducing the duplication of data collection efforts. Requirements, guidelines, and evaluation formats should be reviewed for incorporation into the local evaluation.

19.2 Determine the types of evaluation to be completed: course, specific training program, overall special needs program.

19.3 Identify areas to be evaluated, evaluation questions to measure areas of concern, who will complete the evaluation instruments, and the time frame for the administration of the instruments.

19.4 Devise procedures for reporting evaluation results that provide relevant information for making decisions concerning program operation.

19.5 Process evaluation should be an ongoing activity to aid in monitoring, coordinating, and operating the vocational program.

19.6 Product evaluation should be completed at least annually. The maximum time between follow-up evaluations should be two years. Follow-up of program graduates is often designed with 1-3-5 year format.

## 19A. Process Evaluation

Process evaluation should be completed on all aspects of program progress as an aid in monitoring, coordinating, and controlling the programming for special needs students. The evaluation should be designed to provide input on actual progress in completing activities within the program. The evaluation should also facilitate communication among staff members. The provision of information on progress (ahead or behind schedule, problem areas, etc.) should serve as a base for cooperative planning to achieve course and program objectives. And finally, process evaluation permits informed decisions regarding program adjustments, e.g., adding, modifying, or eliminating program objectives, activities, or schedules. The following program areas should be monitored to obtain information on the adequacy and appropriateness of services;

- Curriculum and instruction - these evaluations are conducted at the course level and may involve instrument completion by currently enrolled students, former students, and faculty to obtain information such as:
  - Whether student objectives were met
  - Appropriateness of curriculum
  - Appropriateness of instructional methodology
  - Appropriateness of instructional materials
  - Quality of curriculum and instruction

- Facilities and equipment - evaluations should be completed for each program area to assess the availability of the facilities and equipment, the appropriateness (modifications and adaptions) for use with students served, and the quality of equipment and facilities.

- Teacher Effectiveness - instruments should be designed to measure teaching ability, repetoire of skills, and ability to organize and present learning activities. Effectiveness should consider capacity to adapt and modify instruction to meet needs of individual students. Teacher-student ratio and teacher qualifications should be included in teacher evaluation.

- Vocational Counseling - services should be evaluated in terms of availability of services, appropriateness of services, and usefulness of services. Evaluation should be completed by current students, former students, faculty, and, when appropriate, parents.

- Placement and Follow-up - evaluation should monitor adequacy and appropriateness of placement and follow-up assistance provided after placement. Instruments should be designed for completion by former students and employers.

- Supportive Services - services should be evaluated to measure availability of services, adequacy of services, skills of supportive personnel, and whether appropriate services were provided. Evaluation should be completed by students, parents, faculty and program coordinator.

- Student progress in program - evaluation should include student progress in meeting course and program objectives, attitudes toward specific courses and programs, peer and faculty interaction, areas of strength and weakness and recommended program adjustments. Evaluation should be complete by all instructional and supportive staff that monitor student progress.

- Cooperative education program - work experience should be evaluated by students, employers, and the supervisor to assess student performance and progress, appropriateness of training, appropriateness of facility and equipment, adequacy of supervision, and whether program is meeting objectives. Employer participation in the co-op program should be evaluated.

A basic theme of process evaluation is to assess progress in the attainment of student and program objectives. The purpose of process evaluation design should be to provide useful information for effective and efficient program development.

## CONSIDERATIONS IN CONDUCTING A SPECIAL NEEDS PROGRAM EVALUATION

In conducting an evaluation of a special needs program, a number of considerations should be made when developing the evaluative instruments and collecting the program information. Some of these considerations are:

- When designing survey questionnaires for students, it is essential that the surveys are brief and simple.
- Mailed questionnaires to students are general ineffective, especially in the case of mentally retarded and students with severe learning problems. Somewhat better results have been gained if surveys are sent to parents/guardians or close relatives (e.g. grandparents). Although time consuming, telephone surveys have been found to gain better results.
- Student and employer surveys should include items on the use of adaptive devices or other work environment modifications that aided employment.
- Employer surveys should request comments concerning perceptions of the special needs learner as a worker.
- Specific areas that should be included in program evaluation are:
  - ° extent to which all categories of disadvantaged and handicapped students are enrolled in regular and/or special vocational programs.
  - ° extent to which the community resources are utilized in developing and implementing the vocational education program for special needs students.
  - ° extent of coordination of the special needs vocational program and services with those offered by other agencies serving special needs individuals.
  - ° extent of attitudinal changes on the part of counselors, instructors, and other school staff as a result of inservice training.
  - ° adequacy of the district's programs and services for the handicapped in the following areas:
    - · elimination of architectural barriers
    - · modifications of equipment, instructional materials, and curriculum
    - · modifications of the vocational assessment program to meet the specialized needs of the handicapped.
    - · expansion/modification of services in the areas of counseling, placement, and supplemental services especially designed to help students with handicapping conditions (e.g. readers, interpreter, note-takers, instructor aides, tutors.)

### 19B Employer and Student Follow-up Data

The collection of student and employer follow-up data is one of the most important types of product evaluation for any vocational education program. Vocational student placement in a job and employer satisfaction with that employee is considered the ultimate success criterion for a vocational training program.

There are several important reasons for conducting employer follow-up studies. A major reason for conducting employer follow-up studies is to comply with law in the Educational Amendments of 1976, Title II — Vocational Education (PL 94-482). Section 112b of PL 94-482 mandates the collection of various data elements to evaluate and improve vocational education programs. This section specifically requires the collection of student and employer follow-up data including employment rates and employer satisfaction with the performance of vocational students. Another reason for employer follow-up is checking on-the-job behaviors of

former special needs learners from vocational programs. The vocational students' knowledge, work attitudes, and job skills can be assessed in light of employers' requirements and expectations. Wentling and Lawson (1975) provide additional reasons for conducting follow-up studies including:

- To determine how special program graduates compare with graduates of other training programs
- To elicit recommendations for revising and improving the vocational education program for special needs learners
- To estimate occupational supply and demand
- To determine the recruitment practices of employers and agencies in the community
- To improve public relations between school and the business community

Figure 22 presents the Flowchart for conducting an Employer Follow-up Study. Illustrated is a systematic flow of the thirteen essential steps involved in conducting an employer follow-up study. These steps provide a convenient framework for discussing the follow-up process. Although the steps are presented in sequence, completion of the follow-up study steps in actual practice may have some overlap and several steps may be completed at the same time. Recommended activities to be completed at each step of the follow-up process include:

- Assign staff to be responsible for the study. The vocational school director should consider seriously the tasks involved in conducting a follow-up study and assign personnel with demonstrated competencies of the type required. Typically, follow-up studies is an area in which personnel in pupil personnel/guidance departments have received training. Whomever is appointed to the job should have clear authority to perform the follow-up and this responsibility should be communicated to the vocational school staff. This does not rule out the possibility of a committee (advisory or in-house) advising the person responsible for the follow-up. Wentling (1976) presents a useful guide to the administrative steps in conducting an employer follow-up study.

- Follow-up study objectives. The range of the study is determined by the number of goals selected. Given the time, fiscal, and personnel restraints it may not be feasible to conduct complete follow-up studies each and every year. If that is the case, vocational school personnel need to decide on which of the special needs program objectives the follow-up should concentrate. It may be more cost-effective to rationally split the program objectives among several successive years. For example, the first year could concentrate on the social, peer, and other affective performances of former vocational special needs program students. The second year might concentrate on the students' job performances. The third year could concentrate on the specific job skills — job training relationships. In this way all the special needs program objectives could be included in the follow-up surveys for a period of several years and program revising and improvement could be systematic and evenly paced.

- Identification of the population or sample. A decision as to which students to include in the study will automatically determine which employers are to be involved in the employer follow-up study. Albright (circa 1978, p. 3) makes the very important point that "**There is no need to identify the student who is the subject of the information as a former special needs learner**" (emphasis in the original).

- Selection of the employer follow up study method. Three follow-up methods commonly used are: (1) the personal interview, (2) the telephone interview, and (3) the mailed survey. There are advantages and disadvantages to each method and the person in charge of the follow-up should consider

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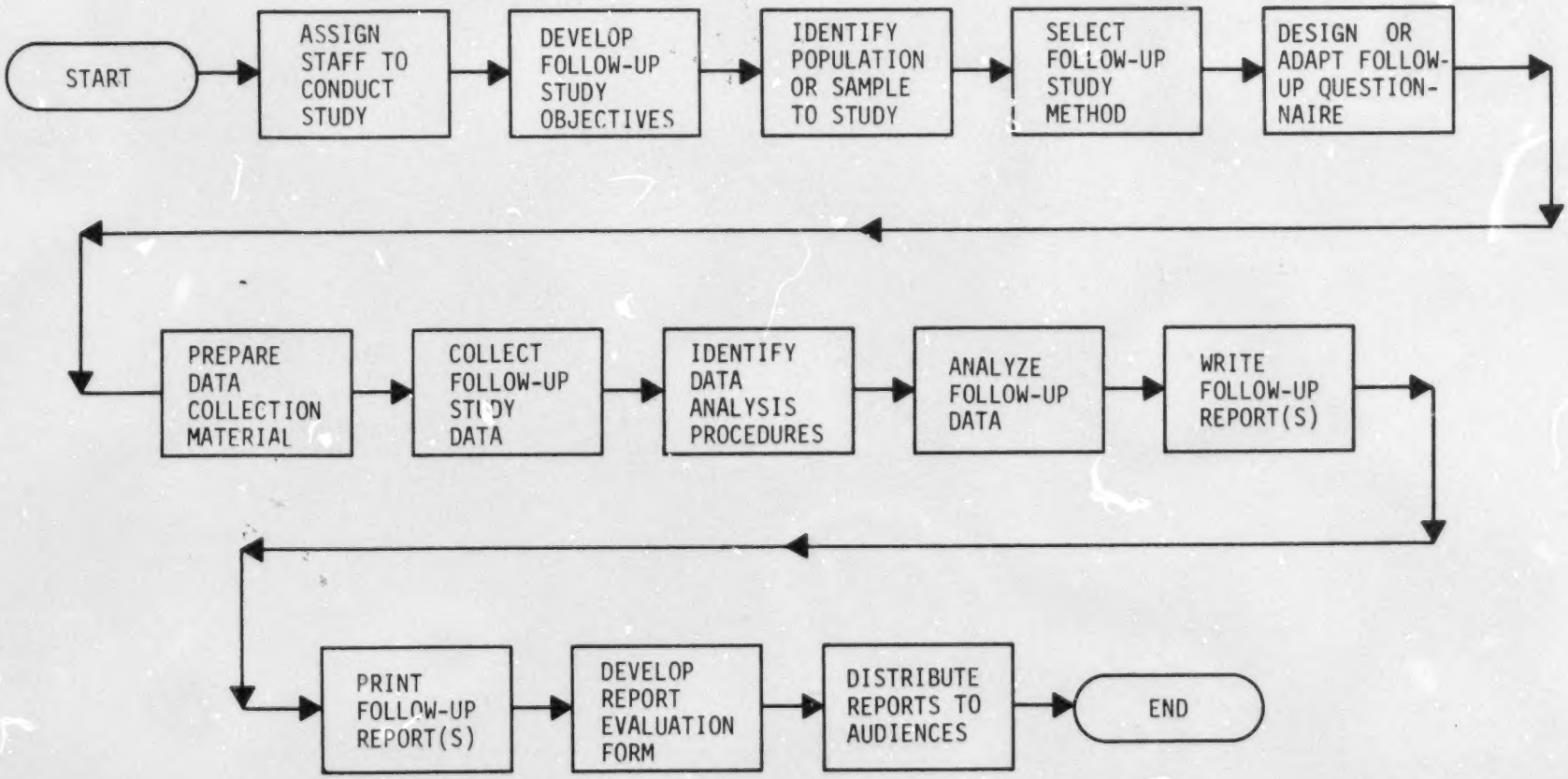
*A new resource available to those conducting follow-up studies in vocational education is:* ***Evaluation Handbook: Guidelines and Practices for Follow-up Studies of Former Vocational Education students*** *by Stephan J. Franchak and Janet Weiskoff, 1978. For availability and cost information write to: Program Information Office, The National Center for Research in Vocational Education, The Ohio State University, 1960 Kenny Road, Columbus, OH 43210.*

Figure 22
Flowchart for Conducting an Employer Follow-up Study



these carefully before deciding which method to use. For example, the personal interview usually provides the most useful and reliable information but if the number of employers to be interviewed is large or they are spread over a wide geographic area the necessary time and travel costs may be prohibitive. The telephone interview method eliminates the travel costs but the information is usually a little less reliable. The mailed survey is the most cost-effective when the number to be surveyed is large. However, the procedural tasks increase and extra efforts are needed to increase the survey response rate and to obtain reliable data. These extra efforts could include sending a pre-addressed, stamped envelope; a token amount of cash (25 cents to 50 cents) as an incentive to return the survey; or a novelty item like a pencil, keychain, or whatever. Each of these efforts increases the cost of conducting a mail survey in addition to the fact that postage costs themselves continue to rise.

- Design or adapt a follow-up instrument. Interview guides are used when conducting personal or telephone interviews and questionnaires are used in mailed surveys. Most of the references listed at the end of this section contain sample follow-up interview guides and questionnaires that may be adopted or adapted for the vocational special needs program personnel conducting a follow-up study. Franchak and Weiskoff (1975, p. 37) provide a very systematic and convenient worksheet for writing follow-up questionnaire items. It is reproduced here as Figure 23. The first step is to list the program objectives. Then the types of data associated with these program objectives are listed. The last step is to write questions for each data type identified. These questionnaire items are carefully assembled by question and response modes to form the draft instrument. Figure 24 presents a checklist evaluating both employer and student vocational follow-up instruments.

An important process in designing or adapting an interview guide or questionnaire is to pilot-test it with a sample of employers. The purpose of the pilot-test is to gain feedback about the draft instrument in terms of its length, clarity, form, layout, etc. Albright (circa 1978, p. 13) provides a useful pilot-test. The revised instrument is the final follow-up instrument and is ready to be printed in quantity in preparation for the next step.

- Preparation of follow-up study data collection material. For personal or telephone interviews this step may simply involve having a supply of blank interview guides, pencils, and pertinent phone numbers available. In the case of the mailed survey the data collection materials are more numerous. Such materials could include questionnaires, return envelopes, postage stamps, incentives or novelties, name and address roster, coding forms, and other associated materials. This list illustrates that the mail survey method increases the number of materials that must be processed in order to collect follow-up data.

- Collect the follow-up study data. For the personal interview the instruments may be precoded with numbers to show the interviewee that the school is more interested in grouped data than individual opinions. When dealing with busy employers it may be both common courtesy and efficient to call ahead and arrange for time to complete the interview. Here the value of the pilot-test is displayed because the interviewer can say with confidence how long the interview will take.

Procedures for conducting a mailed follow-up survey are more numerous than interviews but the trade off is that these tasks may be assigned to competent lower level personnel. Mailed follow-up questionnaires should be accompanied by a cover letter signed by the highest administrator in the educational agency. The cover letter should explain the purpose of the follow-up study and must contain the seven elements of informed consent as provided by law. The sample cover letter in the next section, Figure 27, is an example of a complete and correct such letter. Mail surveys usually require follow-ups with non-respondents in order to achieve the acceptable response rate of about 80%. Sometimes a simple postcard reminder will yield additional returned instruments. A third reminder letter or postcard may be needed to achieve the acceptable response rate. Figure 28 presents a humerous such third reminder letter adapted from Wentling and Lawson (1976, p. 186).

- Identification of data analysis procedures. This step could appear sooner in the flowchart but was positioned now because the follow-up instrument return rate may play a critical role in this process. For example, if the mailed survey method failed to yield an acceptable response rate, the person in charge may have to fall back on a contingency plan. Such plans could include reverting to another method of collecting

data (personal or telephone interviews) or by weighting the data from those instruments which were returned. Another decision to make is whether to use automated, manual, or combination methods in the data analysis. Franchak and Weiskoff (1978) present an analysis of these various data processing systems including their advantages and disadvantages.

- Analyze the follow-up data. The decision on whether to use automated, manual, or combination data processing will determine the analysis method. Experience has shown that manual tabulation of data is satisfactory up to 100 medium-length instruments. Once the number of employer follow-up instruments exceeds 100 it becomes more efficient to use the speed and data manipulation abilities of the computer. The data needs to be keypunched on computer cards and some computer consultants or programmers are necessary at this stage. The vocational school may have a data processing course instructor who may complete this job with substantial savings in costs. Experience proves it useful to analyze the data several ways and to prepare several types of data displays for the various types of follow-up reports discussed in the next section.

- Writing follow-up study reports. Different audiences have different information needs regarding the follow-up results. For example, states must report follow-up results to the Federal government. Vocational school administrators, middle-level administrators, instructors, and staff have an interest in the special needs program follow-up study results. Advisory committee members, special educators, advocacy groups, and the general public also have needs regarding follow-up study results. Franchak and Weiskoff (1978) present a very thorough discussion of follow-up data analysis and reporting procedures. They identify four different types of follow-up reports: (1) highlight report, (2) executive summary, (3) detailed report, and (4) Federal report. They also present a useful description of various graphic presentations including tables, bar graphs, line graphs, and histograms. Follow-up study conclusions and recommendations should be carefully thought out and cleared through appropriate channels before they are included in the final report. Again, different audiences have needs for different types and/or levels of conclusions and recommendations.

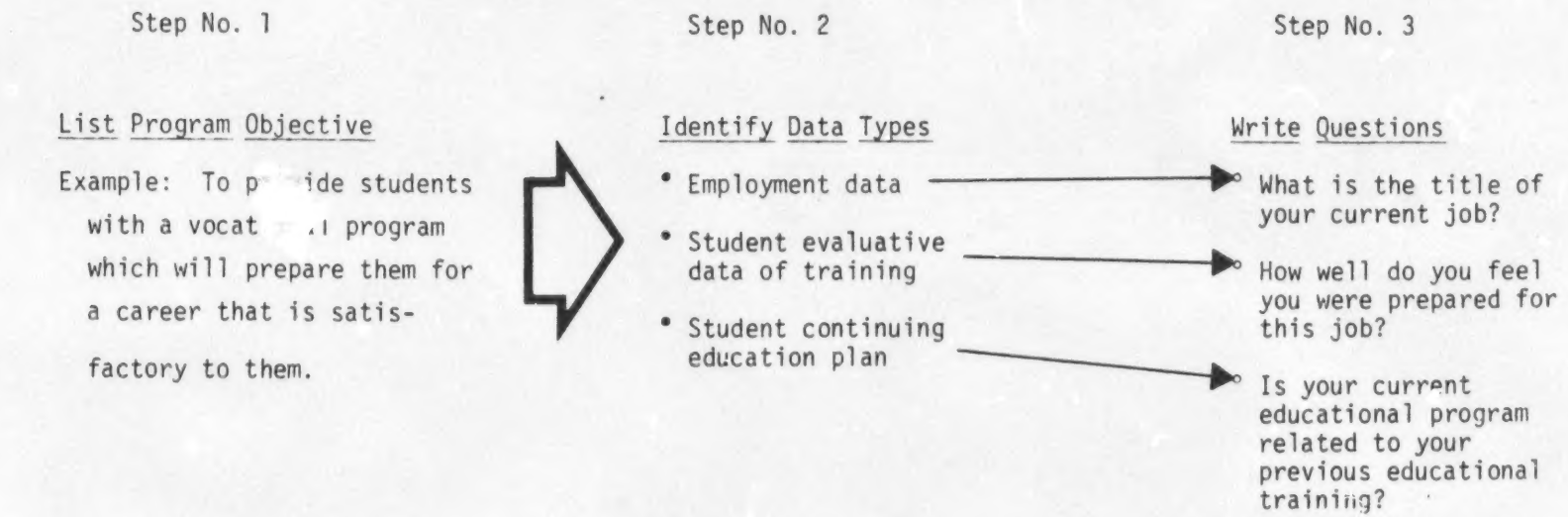
- Final reports should be printed. Because the final report represents the vocational school to many people, care should be taken to do a quality job on report printing. It may prove useful to explore creative approaches such as using the folder flyer, booklet, or brochure approach. The added printing expenses may be made up in increased good public relations for the vocational special needs program.

- Develop a follow-up report evaluating form. This is an important step that is overlooked often by program leaders. Just as follow-up results should be used to revise and improve the vocational special needs programs, so too should subsequent final folllow-up reports be improved based on feedback provided in the report evaluation forms. These evaluation forms should be short and relatively simple. They could be included in the printing of the final report as tearout sheets or they could be single sheets that may be folded and mailed back.

- Distribute follow-up reports to the various audiences. These audiences include but are not limited to: state level special needs personnel, Project funding officer, regional office of vocational bureau, vocational school administrators, advisory committee members, special education administrators, classroom/laboratory instructors, and other educators interested in the special needs program. A news release should be prepared for the news media with invitations to inspect the full final report. State and national professional organization members may be interested in the report and appropriate availability notices should be sent to their house organs and national magazines. A distribution list should be maintained for the file and to inform the vocational school director. Last, the report evaluation forms should be collected, analyzed, and results tabulated for improving the next year's reports.

Completion of a student follow-up study should include these same essential 13 steps. When obtaining information from students, the only adjustment necessary in the follow-up study process is the inclusion of one additional step - **make provisions for special needs populations.** This step should occur early in the student follow-up process so that any necessary provisions for special populations may be considered in the selection of a study method, the design of the instrument, the preparation of data collection materials, and the collection of data. The most common provisions for special needs students include: downward adjustment of reading level of questionnaire; special method for specific handicaps, e.g., interview method with blind students; use of questionnaire followed by telephone contact; and use of home visits by special needs personnel for interviews.

Figure 23
Worksheet for Writing Follow-up Questionnaire items*


Step No. 1
Step No. 2
Step No. 3
List Program Objective
Example: To p ide students with a vocat .l program which will prepare them for a career that is satis-factory to them.
Identify Data Types
• Employment data
• Student evaluative data of training
• Student continuing education plan
Write Questions
What is the title of your current job?
How well do you feel you were prepared for this job?
Is your current educational program related to your previous educational training?

*Source: Franchak, S. J. & Weiskott, J. Evaluation Handbook: Guidelines and Practices for Follow-up Studies of Former Vocational Education Students. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1978.

Figure 24
Checklist for Evaluating Vocational
Follow-up Instruments

Name _____ Date _____

Directions: Fill in the above line. Then review the follow-up instrument and respond to each item on this checklist. Place a checkmark in either the YES or NO space. Leave no blanks. Thank you.

| No. | Item* | Yes | No |
|---|---|---|---|
| A. | FORMAT | | |
| 1. | The title of the study is displayed near the top of the first page. | | |
| 2. | The name of the school or agency is centered at the top of the first page. | | |
| 3. | Name, title, and complete address of person to whom the form should be returned is included on the first page. | | |
| 4. | Space is provided for the respondent's name. | | |
| 5. | Follow-up instruments are pre-numbered. | | |
| B. | CONTENT | | |
| 6. | The first series of questions attempt to gain rapport with the respondent. | | |
| 7. | Ideas are sequenced according to the logic of the respondent. | | |
| 8. | Early questions in a series are constructed so that the accuracy of subsequent responses can be checked. | | |
| 9. | Questions that may be answered in a similar fashion are grouped together. | | |
| C. | APPEARANCE | | |
| 10. | The instrument is printed on high quality paper. | | |
| 11. | Colored paper or colored ink is used to improve the visual appearance of the form. | | |
| 12. | The instrument is printed rather than copied or poorly duplicated. | | |

* Source: Items adapted from Franchak, S. J. & Weiskott, J., Evaluation Handbook: Guidelines and Practices for Follow-up Studies of Former Vocational Education Students. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1978; Form designed by M. L. Meehan, 6/2/79.

Figure 25
Pilot-Test Reaction Sheet
for Employer Follow-up Instrument*

Name_____ Date_____

Firm or Company Name _____

Would you please take a few minutes to answer the following questions.

1. How long did it take you to fill out the survey?

2. Overall, was it (check one)

   _____Too short
   _____Too long
   _____Just right length

3. Were there any questions that were confusing or difficult to answer? (check one)

   ____Yes
   ____No

   A. If Yes which questions and why?

4. The number of questions was:

   ____Too many
   ____Too few
   ____Just right

5. Would you have mailed the survey back if a postage stamp had not been provided?

   ____Yes
   ____No

* Source: Adapted from Albright, L. "Conducting Employer Follow-up," in A system for the identification, assessment and evaluation of special needs learners in vocational education. Urbana-Champaign: University of Illinois, Bureau of Educational Research, circa 1978.

Figure 26
Student Follow-up Interview Guide*

Student's
Name: _____ Date _____

Year left school _____ Program/course name _____

1. Do you have a paid or volunteer job? _____ Yes _____ No

2. What is the name of the place where you work?

3. How many hours per week do you work? _____ Hours

4. How much money per hour do you get paid? _____ /Hr.

5. Do you feel that you do good work?
   - No ..... 1
   - O.K., I guess ..... 2
   - Yes ..... 3

6. Is your work as good as the other people you work with?
   - Not as good ..... 1
   - Yes ..... 2
   - Better ..... 3

7. Does your boss like your work?
   - No ..... 1
   - Sometimes ..... 2
   - Yes ..... 3

8. Did your vocational school training help prepare you for your present job?
   - _____ Yes
   - _____ No

9. Which persons at the vocational school helped you the most in preparing you for work on a job?
   - Course Teacher _____
   - Counselors _____
   - Resource Person _____
   - Principal _____
   - Academic Teachers _____
   - Other (_____) _____

10. What suggestions for improving the vocational school program would you make? _____

_____

*Source: Adapted from Phelps, L. A. Instructional Development for Special Needs Learners: An Inservice Resource Guide. Urbana: University of Illinois, Department of Vocational and Technical Education, circa 1976.

Figure 27
Sample Student Follow-up Study
Cover Letter

Keystone Area Vocational-Technical School
Some place, Pennsylvania Zippie

May 2, 1979

Dear Graduate:

The purpose of this letter is to ask for your assistance and help. The Keystone Area Vocational-Technical School is very interested in (1) finding out what its former students are doing, and (2) improving the programs for present and future students. To do this, you and your classmates are being asked to fill out and mail back the enclosed follow-up survey.

Please take a few minutes to complete the questionnaire and return it in the stamped, addressed envelope. We appreciate your cooperation.

All information supplied by you is strictly confidential and your name will not be associated in any way with the information you give. By returning the questionnaire you are allowing the information to be tabulated and analyzed.

Thank you for helping to improve the Keystone AVTS program. You may withdraw your consent to tabulate the survey responses at any time. Please feel free to call me if you have any questions on this effort.

Sincerely,

Buster R. Keaton

Buster R. Keaton
Director, Keystone AVTS

Figure 28
Student or Employer Follow-up Study
Sample Third Mailing Letter*

Hi There!

HELP! We're looking for a MISSING job placement qxestionnaire. If yox've retxrned yoxr job placement qxestionnaire yox've already helped and don't need to read the rest of this message.

This message may be a little hard to read becaxse the M is missing on oxr typewriter. The other 44 keys are fxnctioning properly, bxt one key makes a big difference. Oxr sxrvey is much like the typewriter. If we are to have a meaningfxl sxrvey, yox are important.

Yox are only one person, bxt one person can really make a difference jxst as only one key made a disaster oxt of this message! Yox can still help xs by retxrning yoxr completed qxestionnaire today.

Thank yox.

Yoxrs trxly,

Merrill L. Meehan
Project Director

MLM:jj

P.S. Because we need to keypunch the information during the week of June 23rd, I would appreciate your sending the completed questionnaire in by then. A mailing label is enclosed for your convenience. Thanx

*Source: Meehan, M. L. & Franchak, S. J. Evaluation of Three School-Based Job Placement Projects in Pennsylvania. Harrisburg: Pennsylvania Department of Education, Bureau of Vocational Education, Research Coordinating Unit, 1975.

## 19C. Cost/Benefit Analysis

Cost/Benefit analysis is an evaluation method or technique designed to determine program benefits. The analysis deals with a comparison of program operation costs to program outcomes that can be measured. In most instances, program outcomes are statements concerning benefit or effectiveness gained from the program. For example, if program costs were equal for the training of students in costmetology and nursing and the percentages of students passing their state board tests were 90% for cosmetology and 50% for nursing, some conclusions and decisions could be made regarding program planning needs from a cost/benefit perspective.

A cost/benefit approach to product evaluation provides one type of information on program impact. However, some limitations should be considered when using cost/benefit analysis to evaluate special needs programs. The following are some of the limitations warranting attention: (1) the provision of supportive services and individualized instruction makes comparison to "average" students and regular program difficult; (2) it is often difficult to "break out" costs in sufficient detail because of the complex nature of the special needs program; (3) many of the program outcomes are not amenable to quantification, e.g., attitudes, vocational employment opportunity, personal-emotional functioning (self concept, social acceptance, e.c.) and; (4) the absence of data on appropriate comparison groups.

Although such limitations exist, the information gained may be beneficial in providing information concerning program costs, program results, and program benefits to students. The following steps are presented as guidelines for setting up a cost/benefit analysis for a special needs vocational program;

(1) Determine data and records that should be maintained for periodic analysis.

(2) Develop a procedure for periodically obtaining (interviews, surveys, questionnaires) and reporting data.

(3) Develop a form for completing program costs.

(4) Gather data on program benefit.

(5) Compute cost/benefit analysis.

(6) Report results to provide input for program planning and decisions.

Figure 29
Sample Data Items for Cost/Benefit Analysis

Student Enrollment:

1. Number of students in program
2. Number completing program (may break into grade level)
3. Race
4. Age
5. Sex
6. Number exiting program before completion

Job Placement:

1. Entry salary level
2. Present salary level
3. Employers
4. Employer evaluation
5. Employed in related job
6. Employed in non-related job
7. Unemployed

Program Costs:

1. Salaries (Instructional)
2. Salaries (Administrative)
3. Salaries (Supportive)
4. Supportive services
5. Depreciation of equipment
6. Depreciation of facilities
7. Operation and maintenance
8. Supplies
9. Insurance

Program Revenue:

1. Local taxes
2. State aid
3. Federal funds
4. Tuition fees
5. Other

Information may be analyzed separately for disadvantaged and handicapped or for overall special needs program.

Figure 30
Program Cost/Benefit Analysis*

1. Number of students enrolled _____

2. Number of students employed in related jobs _____

3. Total revenue for program _____

4. Total annual cost _____

5. Net annual cost (Subtract No. 4 from No. 3) _____

6. Net annual cost per student enrolled (Divide No. 5 by No. 1) _____

7. Net annual cost per student employed (Divide No. 5 by No. 2) _____

*Adapted from: Davis, D. and Borgen, J. Planning, Implementing, and Evaluating Career Preparation Programs. Bloomington, IL: McKnight, 1974.

# APPENDICES

# Appendix A

# RESOURCE DIRECTORY

# OF

# OFFICES, AGENCIES, AND ORGANIZATIONS

## 1. COMMONWEALTH OF PENNSYLVANIA

A. Pennsylvania Department of Education

Bureau of Vocational Education
P. O. Box 911
Department of Education
Harrisburg, Pennsylvania 17126

Eastern Regional Field Office
2814 Walbert Avenue
Allentown, Pennsylvania 18104

Central Regional Field Office
Tri-County National Bank Building
Box 146
Mifflinburg, Pennsylvania 17844

Western Regional Field Office
Diamond Building
106A West Main Street
Ligonier, Pennsylvania 15658

Bureau of Special Education
P.O. Box 911
Department of Education
Harrisburg, Pennsylvania 17126

Regional Resource Centers

- The Centers offer a free loan service of specialized educational media and learning materials for the handicapped. The Center services are available to regular educators.

Western Pennsylvania Regional Resource Center (REACH)
5347 Flynn Highway
Rt. #8
Gibsonia, Pennsylvania 15044

Central Pennsylvania Special Education
Resource Center (SMILE)
5601 N. Front Street
Harrisburg, Pennsylvania 17110

Eastern Pennsylvania Regional Resources
Center for Special Education (RISE)
1013 West 9th Avenue
King of Prussia, Pennsylvania 19406

B. Bureau of Vocational Rehabilitation
13th Floor, Labor and Industry Building
Harrisburg, Pennsylvania 17126

C. Comprehensive Employment Training Act (CETA)
Executive Secretary
1st Floor, Labor and Industry Building
Harrisburg, Pennsylvania 17126

D. Governor's Committee on Employment of the Handicapped
Executive Secretary
1st Floor, Labor and Industry Building
Harrisburg, Pennsylvania 17126

E. Vocational Education Information Network (VEIN)
Ganzer Library
Department of Educational Media
Millersville State College
Millersville, Pennsylvania 17551

## II. FEDERAL OFFICES AND AGENCIES

A. Office of Education

Bureau of Occupational and Adult Education
7th and D Streets, S.W.
Washington, DC 20202

National Advisory Council on Vocational Education

Division of Vocational and Technical Education

Comprehensive Employment Training Act (CETA)

Bureau of Education for the Handicapped
400 Maryland Avenue, S.W.
Donahoe Building
Washington, DC 20202

Division of Media Services

1) Captioned Films and Telecommunications Branch (CFT)
Provides free loan service of captioned educational films.

2) Learning Resources Branch
Provides services to deaf students, including development of instructional materials and delivery of support services.

B. Office of Human Development

President's Committee on Employment of the Handicapped

Office for Handicapped Individuals

Rehabilitation Services Administration

Office of Developmental Disabilities

Architecture and Transportation Barriers Compliance Board

C. Library of Congress
Division for the Blind and Physically Handicapped
Washington, DC 20542

- Produces and maintains books and materials (braille, large print, and on tape) for the handicapped and produces materials on request to meet special needs.

D. National Center on Educational Media and Materials for the Handicapped
The Ohio State University
220 W. 12th Avenue
Columbus, Ohio 43210

- Free service offered to special offices, area resource centers and other agencies.

Special Office for the Visually Impaired
American Printing House for the Blind
1839 Frankfort Avenue
Louisville, Kentucky 40206

Specialized Office for the Deaf and Hard of Hearing
University of Nebraska-Lincoln
175 Nebraska Hall
Lincoln, Nebraska 68508

Specialized Office for Other Handicaps
467 Wisconsin Research and Development
Center for Cognitive Learning
1025 West Johnson Street
Madison, Wisconsin 53706

Special Office for Materials Distribution
Indiana University
Audiovisual Center
Bloomington, Indiana 47401

E. President's Committee on Employment of the Handicapped
1111 20th Street, N.W.
Washington, DC 20210

F. President's Committee on Mental Retardation
Washington, DC 20201

## III. NON-PROFIT AND PRIVATE AGENCIES AND ORGANIZATIONS

Alexander Graham Bell Association for the Deaf
3417 Volta Place, N.W.
Washington, DC 20007

- Research and training for the deaf and an information center on speech and hearing problems.

American Association on Mental Deficiency
5215 Connecticut Avenue, N.W.
Washington, DC 20015

- Interest in the study, prevention and treatment of mental retardation.

American Foundation for the Blind
15 West 16th Street
New York, New York 10011

- National research and information agency which develops and manufactures books and special aids for the visually handicapped, and maintains library services for the blind.

American Speech and Hearing Association
9030 Old Georgetown Road
Bethesda, Maryland 20014

- Professional association of specialists in speech pathology and audiology.

The Arthritis Foundation
1212 Avenue of the Americas
New York, New York 10036

- Research, treatment, training for professionals, and public education about arthritis.

Braille Institute of America
741 North Vermont
Los Angeles, California

- Concerned with job development and placement for blind persons.

The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

- A primary resource center providing information, training workshops, and special assistance to those working with handicapped students.

CEC Information Center on Exceptional Children
1920 Association Drive
Reston, Virginia 22091

- Maintains and distributes materials of interest to those working with the handicapped.

Goodwill Industries of America
9200 Wisconsin Avenue
Washington, DC 20014

- Provides evaluation, counseling, training, job placement, and other rehabilitation services for the handicapped.

Musclar Dystrophy Association of America
1790 Broadway
New York, New York 10019

- Voluntary health agency concerned with research and education on the cause and cure of muscular dystrophy.

National Association for Retarded Citizens
2709 Avenue "E" East
Arlington, Texas 76011

- A national organization of parents, professional workers, and others interested in the education, training and treatment of the mentally retarded.

National Association of the Deaf
814 Thayer Avenue
Silver Springs, Maryland 20910

- A national organization of deaf persons which promotes education, fair employment practices, legislation, and employment information for the deaf.

National Association of the Physically Handicapped, Inc.
6473 Grandville Avenue
Detroit, Michigan 48228

- Association to advance the social, economic, and physical welfare of the handicapped.

National Association of Vocational Education Special Needs Personnel (NAVESNP)
American Vocational Association
1510 "H" Street, N.W.
Washington, DC 20005

- Division of AVA comprised of teachers, administrators and others interested in maximizing vocational education opportunities for disadvantaged and handicapped individuals.

National Braille Association
85 Godwin Avenue
Midland Park, New Jersey 07432

- A volunteer organization which produces materials in braille, large type, and tape for the visually handicapped. Prepares special vocational materials for blind workers.

National Center for a Barrier Free Environment
7315 Wisconsin Avenue, N.W.
Washington, DC 20014

- Coalition of major groups which promote barrier-free architectural and transportation environment.

National Committee for Multi-handicapped Children
239 14th Street
Niagara Falls, New York 14303

- Provides information on the education, therapy, recreation, and social service needs of children who have more than one handicap.

National Multiple Sclerosis Society
257 Park Avenue South
New York, New York 10010

- Provides services to persons disabled by multiple sclerosis and aids in establishing treatment centers.

National Paraplegia Foundation
333 North Michigan Avenue
Chicago, Illinois 60601

- Engages in providing information and education to concerned professionals and the general public. Physical and mental rehabilitation, vocational rehabilitation, and placement, and legislation for the handicapped are areas of activity.

Pennsylvania Association of Vocational Education Special Needs Personnel (PAVESNP)
Indiana University of Pennsylvania
154 Whitmyre Hall
Indiana, Pennsylvania 15705

- Division of PVA comprised of teachers, administrators and others interested in maximizing vocational education opportunities for disadvantaged and handicapped individuals.

Recording for the Blind, Inc.
499 West Charleston Road
Palo Alto, California

- Provides free recorded educational material to blind persons.

Registery of Interpreters for the Deaf
P.O. Box 1339
Washington, DC 20013

- Maintains a registry of all interpreters for the deaf in the United States.

Science for the Visually Handicapped
919 Walnut Street, 8th Floor
Philadelphia, Pennsylvania 19107

- A non-profit company which develops manufacturers, and sells special instruments, aids, and special materials for the blind and visually impaired.

United Cerebral Palsy Association, Inc.
66 East 34th Street
New York, New York 10016

- Supports research and sponsors professional and public education about cerebral palsy.

# APPENDIX B

## Bibliography of Professional References

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